

gag ctg aca cat aga atc cga tca aaa tcc tca cct gat gag aat gag	715
Glu Leu Thr His Arg Ile Arg Ser Lys Ser Ser Pro Asp Glu Asn Glu	
147 152 157 162	
aat gag gtt gag gat tca gct gac ttt gtg agc ttc ttc cca gac ttt	763
Asn Glu Val Glu Asp Ser Ala Asp Phe Val Ser Phe Phe Pro Asp Phe	
163 168 173 178	
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Val Trp Thr Leu Arg Asp Phe Ser Leu Asp Leu Glu Ala Asp Gly Gln	
179 184 189 194	
ccc ctc aca cca gat gag tac ctg aca tac tcc ctg aag ctg aag aaa	859
Pro Leu Thr Pro Asp Glu Tyr Leu Thr Tyr Ser Leu Lys Leu Lys Lys	
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ggt acc agt caa aaa gat gaa act ttt aac ctg ccc aga ctc tgt atc	907
Gly Thr Ser Gln Lys Asp Glu Thr Phe Asn Leu Pro Arg Leu Cys Ile	
211 216 221 226	
cgg aaa ttc ttc cca aag aaa aaa tgc ttt gtc ttt gat cgg ccc gtt	955
Arg Lys Phe Phe Pro Lys Lys Lys Cys Phe Val Phe Asp Arg Pro Val	
227 232 237 242	
cac cgc agg aag ctt gcc cag ctc gag aaa cta caa gat gaa gag ctg	1003
His Arg Arg Lys Leu Ala Gln Leu Glu Lys Leu Gln Asp Glu Glu Leu	
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gac ccc gaa ttt gtg caa caa gta gca gac ttc tgt tcc tac atc ttt	1051
Asp Pro Glu Phe Val Gln Gln Val Ala Asp Phe Cys Ser Tyr Ile Phe	
259 264 269 274	
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Ser Asn Ser Lys Thr Lys Thr Leu Ser Gly Gly Ile Gln Val Asn Gly	
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cct cgt cta gag agc ctg gtg ctg acc tac gtc aat gcc atc agc agt	1147
Pro Arg Leu Glu Ser Leu Val Leu Thr Tyr Val Asn Ala Ile Ser Ser	
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Glu Asn Ser Ala Ala Val Gln Lys Ala Ile Ala His Tyr Glu Gln Gln	
323 328 333 338	
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Asp Leu His Arg Asp Ser Glu Arg Glu Ala Ile Glu Val Phe Ile Arg	
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Gln Leu Glu Lys Lys Arg Asp Asp Phe Cys Lys Gln Asn Gln Glu Ala	
387 392 397 402	
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Ser Ser Asp Arg Cys Ser Ala Leu Leu Gln Val Ile Phe Ser Pro Leu	
403 408 413 418	
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Glu Glu Glu Val Lys Ala Gly Ile Tyr Ser Lys Pro Gly Gly Tyr Arg	
419 424 429 434	
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Leu Phe Val Gln Lys Leu Gln Asp Leu Lys Lys Lys Tyr Tyr Glu Glu	
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Pro Arg Lys Gly Ile Gln Ala Glu Glu Ile Leu Gln Thr Tyr Leu Lys	
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Ser Lys Glu Ser Met Thr Asp Ala Ile Leu Gln Thr Asp Gln Thr Leu	
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Thr Glu Lys Glu Lys Glu Ile Glu Val Glu Arg Val Lys Ala Glu Ser	
483 488 493 498	
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Ala Gln Ala Ser Ala Lys Met Leu Gln Glu Met Gln Arg Lys Asn Glu	
499 504 509 514	
cag atg atg gaa cag aag gag agg agt tat cag gaa cac ttg aaa caa	1819
Gln Met Met Glu Gln Lys Glu Arg Ser Tyr Gln Glu His Leu Lys Gln	
515 520 525 530	
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Leu Thr Glu Lys Met Glu Asn Asp Arg Val Gln Leu Leu Lys Glu Gln	
531 536 541 546	
gag agg acc ctc gct ctt aaa ctt cag gaa cag gag caa cta cta aaa	1915
Glu Arg Thr Leu Ala Leu Lys Leu Gln Glu Gln Glu Gln Leu Leu Lys	
547 552 557 562	
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Glu Gly Phe Gln Lys Glu Ser Arg Ile Met Lys Asn Glu Ile Gln Asp	
563 568 573 578	
ctc cag acg aaa atg aga cga cga aag gca tgt acc ata agc taa aga	2011
Leu Gln Thr Lys Met Arg Arg Arg Lys Ala Cys Thr Ile Ser *	
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aaggggtgaa ataaaagtcc agcgatccag cgaaagaaaa gagaagtgc agaaacaact 180
ttacctggac tgaagataaa agcacagaca agagaacaat gccctggac atg gct 235
Met Ala
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Pro Glu Ile His Met Thr Gly Pro Met Cys Leu Ile Glu Asn Thr Asn
3 8 13 18
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Gly Glu Leu Val Ala Asn Pro Glu Ala Leu Lys Ile Leu Ser Ala Ile
19 24 29 34
aca cag cct gtg gtg gtg gca att gtg ggc ctc tac cgc aca gga 379
Thr Gln Pro Val Val Val Val Ala Ile Val Gly Leu Tyr Arg Thr Gly
35 40 45 50
aaa tcc tac ctg atg aac aag cta gct ggg aag aaa aag ggc ttc tct 427
Lys Ser Tyr Leu Met Asn Lys Leu Ala Gly Lys Lys Lys Gly Phe Ser
51 56 61 66
ctg ggc tcc acg gtg cag tct cac act aaa gga atc tgg atg tgg tgt 475
Leu Gly Ser Thr Val Gln Ser His Thr Lys Gly Ile Trp Met Trp Cys
67 72 77 82
gtg ccc cac ccc aag aag cca ggc cac atc cta gtt ctg ctg gac acc 523
Val Pro His Pro Lys Lys Pro Gly His Ile Leu Val Leu Leu Asp Thr

83	88	93	98	
gag ggt ctg gga gat	gta gag aag ggt gac	aac cag aat gac tcc tgg		571
Glu Gly Leu Gly Asp	Val Glu Lys Gly Asp	Asn Gln Asn Asp Ser Trp		
99	104	109	114	
atc ttc gcc ctg gcc gtc	ctc ctg agc agc acc	ttc gtg tac aat agc		619
Ile Phe Ala Leu Ala Val	Leu Leu Ser Ser Thr	Phe Val Tyr Asn Ser		
115	120	125	130	
ata gga acc atc aac cag	cag gct atg gac caa	ctg tac tat gtg aca		667
Ile Gly Thr Ile Asn Gln	Gln Ala Met Asp Gln	Leu Tyr Tyr Val Thr		
131	136	141	146	
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Glu Leu Thr His Arg Ile	Arg Ser Lys Ser Ser	Pro Asp Glu Asn Glu		
147	152	157	162	
aat gag gtt gag gat tca	gct gac ttt gtg agc	ttc ttc cca gac ttt		763
Asn Glu Val Glu Asp Ser	Ala Asp Phe Val Ser	Phe Phe Pro Asp Phe		
163	168	173	178	
gtg tgg aca ctg aga gat	ttc tcc ctg gac ttg	gaa gca gat gga caa		811
Val Trp Thr Leu Arg Asp	Phe Ser Leu Asp Leu	Glu Ala Asp Gly Gln		
179	184	189	194	
ccc ctc aca cca ggt acc	agt caa aaa gat gaa	act ttt aac ctg ccc		859
Pro Leu Thr Pro Gly Thr	Ser Gln Lys Asp Glu	Thr Phe Asn Leu Pro		
195	200	205	210	
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Arg Leu Cys Ile Arg Lys	Phe Phe Pro Lys Lys	Lys Cys Phe Val Phe		
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gat cgg ccc gtt cac cgc	agg aag ctt gcc cag	ctc gag aaa cta caa		955
Asp Arg Pro Val His Arg	Arg Lys Leu Ala Gln	Leu Glu Lys Leu Gln		
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Asp Glu Glu Leu Asp Pro	Glu Phe Val Gln Gln	Val Ala Asp Phe Cys		
243	248	253	258	
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Ser Tyr Ile Phe Ser Asn	Ser Lys Thr Lys Thr	Leu Ser Gly Gly Ile		
259	264	269	274	
cag gtc aac ggg cct cgt	cta gag agc ctg gtg	ctg acc tac gtc aat		1099
Gln Val Asn Gly Pro Arg	Leu Glu Ser Leu Val	Leu Thr Tyr Val Asn		
275	280	285	290	
gcc atc agc agt ggg gat	ctg ccg tgc atg gag	aac gca gtc ctg gcc		1147
Ala Ile Ser Ser Gly Asp	Leu Pro Cys Met Glu	Asn Ala Val Leu Ala		
291	296	301	306	
ttg gcc cag ata gag aac	tca gct gca gtg caa	aag gct att gcc cac		1195
Leu Ala Gln Ile Glu Asn	Ser Ala Ala Val Gln	Lys Ala Ile Ala His		
307	312	317	322	

tat gaa cag cag atg ggc cag aag gtg cag ctg ccc aca gaa acc ctc	1243
Tyr Glu Gln Gln Met Gly Gln Lys Val Gln Leu Pro Thr Glu Thr Leu	
323 328 333 338	
cag gag ctg ctg gac ctg cac agg gac agt gag aga gag gcc att gaa	1291
Gln Glu Leu Leu Asp Leu His Arg Asp Ser Glu Arg Glu Ala Ile Glu	
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Val Phe Ile Arg Ser Ser Phe Lys Asp Val Asp His Leu Phe Gln Lys	
355 360 365 370	
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Glu Leu Ala Ala Gln Leu Glu Lys Lys Arg Asp Asp Phe Cys Lys Gln	
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Asn Gln Glu Ala Ser Ser Asp Arg Cys Ser Ala Leu Leu Gln Val Ile	
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Phe Ser Pro Leu Glu Glu Glu Val Lys Ala Gly Ile Tyr Ser Lys Pro	
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Gly Gly Tyr Arg Leu Phe Val Gln Lys Leu Gln Asp Leu Lys Lys Lys	
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Tyr Tyr Glu Glu Pro Arg Lys Gly Ile Gln Ala Glu Glu Ile Leu Gln	
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aca tac ttg aaa tcc aag gag tct atg act gat gca att ctc cag aca	1627
Thr Tyr Leu Lys Ser Lys Glu Ser Met Thr Asp Ala Ile Leu Gln Thr	
451 456 461 466	
gac cag act ctc aca gaa aaa gaa aag gag att gaa gtg gaa cgt gtg	1675
Asp Gln Thr Leu Thr Glu Lys Glu Lys Glu Ile Glu Val Glu Arg Val	
467 472 477 482	
aaa gct gag tct gca cag gct tca gca aaa atg ttg cag gaa atg caa	1723
Lys Ala Glu Ser Ala Gln Ala Ser Ala Lys Met Leu Gln Glu Met Gln	
483 488 493 498	
aga aag aat gag cag atg atg gaa cag aag gag agg agt tat cag gaa	1771
Arg Lys Asn Glu Gln Met Met Glu Gln Lys Glu Arg Ser Tyr Gln Glu	
499 504 509 514	
cac ttg aaa caa ctg act gag aag atg gag aac gac agg gtc cag ttg	1819
His Leu Lys Gln Leu Thr Glu Lys Met Glu Asn Asp Arg Val Gln Leu	
515 520 525 530	
ctg aaa gag caa gag agg acc ctc gct ctt aaa ctt cag gaa cag gag	1867
Leu Lys Glu Gln Glu Arg Thr Leu Ala Leu Lys Leu Gln Glu Gln Glu	
531 536 541 546	

61	66	71	76	
gga att ggc cta gat	ggc atc cca gag gtt	aca gct tca gaa gga ttt	289	
Gly Ile Gly Leu Asp	Gly Ile Pro Glu Val	Thr Ala Ser Glu Gly Phe		
77	82	87	92	
act gtg aat gaa ata	aac aag aaa agc att	cat att tca tgt cca aag	337	
Thr Val Asn Glu Ile	Asn Lys Lys Ser Ile	His Ile Ser Cys Pro Lys		
93	98	103	108	
gaa aat gca tct tct	aag ttt ttg gca cca tat	act act ttt tcc aga	385	
Glu Asn Ala Ser Ser	Lys Phe Leu Ala Pro	Tyr Thr Thr Phe Ser Arg		
109	114	119	124	
att cat aca aag agt	ata aca tgc ctg gac	att tcc agc aga gga ggt	433	
Ile His Thr Lys Ser	Ile Thr Cys Leu Asp	Ile Ser Ser Arg Gly Gly		
125	130	135	140	
ctt ggt gtg tct tct	agt act gac ggg acc	atg aaa atc tgg cag gct	481	
Leu Gly Val Ser Ser	Ser Thr Asp Gly Thr	Met Lys Ile Trp Gln Ala		
141	146	151	156	
tcc aat gga gaa ctc	agg aga gta ttg gaa gga	cat gtg ttt gat gtg	529	
Ser Asn Gly Glu Leu	Arg Arg Val Leu Glu	Gly His Val Phe Asp Val		
157	162	167	172	
aat tgt tgc agg ttt	ttc cca tca ggc ctt	gtg gtc ctg agt ggg gga	577	
Asn Cys Cys Arg Phe	Phe Pro Ser Gly Leu	Val Val Leu Ser Gly Gly		
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Met Asp Ala Gln Leu	Lys Ile Trp Ser Ala	Glu Asp Ala Ser Cys Val		
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gtg acc ttc aaa ggt	cac aaa gga ggt atc	ctg gat aca gcc atc gtt	673	
Val Thr Phe Lys Gly	His Lys Gly Gly Ile	Leu Asp Thr Ala Ile Val		
205	210	215	220	
gat cgg ggg agg aat	gtg gtg tct gct tct	cga gat ggg aca gca cga	721	
Asp Arg Gly Arg Asn	Val Val Ser Ala Ser	Arg Asp Gly Thr Ala Arg		
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ctt tgg gat tgt ggg	cgc tca gcc tgc ttg	gga gtc ctt gca gat tgt	769	
Leu Trp Asp Cys Gly	Arg Ser Ala Cys Leu	Gly Val Leu Ala Asp Cys		
237	242	247	252	
ggt tct tct atc aat	gga gtg gcg gtg ggt	gct gct gac aac tcc ata	817	
Gly Ser Ser Ile Asn	Gly Val Ala Val Gly	Ala Ala Asp Asn Ser Ile		
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aac ctt ggc tcc cct	gag cag atg ccc agt	gaa cgg gag gtt gga aca	865	
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gag gcc aaa atg /ctg	ctc ttg gcc cgg gaa	gat aag aaa ctt cag tgc	913	
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317 322 327 332	
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333 338 343 348	
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Cys Asp Pro Val Tyr Lys Val Ala Thr Trp Glu Lys Gln Ile Tyr Thr	
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Cys Cys Arg Asp Gly Leu Val Arg Arg Tyr Gln Leu Ser Asp Leu *	
413 418 423 428	
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Met Met Lys Lys Asn Asn	
1 3	
tcc gcc aag cgg gga cct cag gat gga aac cag cag cct gca ccg ccc	162
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Asp Leu Ser Asp Tyr Glu Lys Cys Glu Glu Leu Arg Lys Ser Lys Ser	
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Arg Ser Lys Lys Asn His Ser Lys Phe Thr Leu Ala His Ser Lys Gln	
87 92 97 102	
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Arg Arg Glu Gly Ile Val Asp Gln Cys Pro Gln Leu Cys His His Pro	
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Ala Glu Gly Thr Thr Cys Cys Leu Glu Val Thr Ala Gln Gln Glu Glu
  13                      18          |          23                      28

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Lys Gln Glu Asp Ala Ala Ile Cys Pro Val Thr Val Leu Pro Glu Glu
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Gly	Leu	Leu	Gly	Pro	Thr	Gln	Arg	Thr	Glu	Tyr	Arg	Asp	Val	Met	Leu	
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93					98					103					108	
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Pro	Ser	Leu	Lys	Val	Gln	Glu	Ser	Ser	Arg	Asp	Cys	Ala	Leu	Ser	Ser	
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Thr	Leu	Glu	Asp	Thr	Leu	Gln	Gly	Gly	Val	Gln	Glu	Val	Gln	Asp	Thr	
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Gln	Ile	Thr	Phe	Ile	Arg	Ile	His	Lys	Gly	Ser	Gln	Val	Cys	Arg	Cys	
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Ser Gly Glu Arg Pro Phe Glu Cys Gln Glu Cys Gly Arg Thr Phe Asn	
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gat cgc tca gcc atc tcc cag cac ctg agg act cac act ggc gct aag	1119
Asp Arg Ser Ala Ile Ser Gln His Leu Arg Thr His Thr Gly Ala Lys	
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Pro Tyr Lys Cys Gln Asp Cys Gly Lys Ala Phe Arg Gln Ser Ser His	
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Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Arg Pro Tyr Ala Cys	
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Asn Lys Cys Gly Lys Ala Phe Thr Gln Ser Ser His Leu Ile Gly His	
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Gln Arg Thr His Asn Arg Thr Lys Arg Lys Lys Lys Gln Pro Thr Ser	
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tgc cag gcc tgg aag gat gcg agg ctc ccg ctc tcc acc aca agc aac      158
Cys Gln Ala Trp Lys Asp Ala Arg Leu Pro Leu Ser Thr Thr Ser Asn
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gaa gcc tgc aag ctg ttc gat gcc acg ctg acc cag tat gta aaa tgg      206
Glu Ala Cys Lys Leu Phe Asp Ala Thr Leu Thr Gln Tyr Val Lys Trp
26                                31                                36                                41

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Thr Asn Asp Lys Ser Leu Gly Gly Ile Glu Gly Cys Leu Ser Lys Leu
42                                47                                52                                57

aaa gca gca gat cca acc ttt gtg atg ggc cac gcc atg gct act ggc      302
Lys Ala Ala Asp Pro Thr Phe Val Met Gly His Ala Met Ala Thr Gly
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ctt gtg ctg att ggc act gga agc tcc gtg aag ctg gac aaa gag ctg      350
Leu Val Leu Ile Gly Thr Gly Ser Ser Val Lys Leu Asp Lys Glu Leu
74                                79                                84                                89

gac ctg gct gtg aag aca atg gtg gag att tca aga acc cag ccg ctg      398
Asp Leu Ala Val Lys Thr Met Val Glu Ile Ser Arg Thr Gln Pro Leu
90                                95                                100                                105

aca agg cgg gag cag ctg cac gtg tct gca gta gag aca ttt gcc aat      446
Thr Arg Arg Glu Gln Leu His Val Ser Ala Val Glu Thr Phe Ala Asn
106                                111                                116                                121

ggg aac ttt ccg aaa gcc tgt gaa cta tgg gaa cag att ctc cag gac      494
Gly Asn Phe Pro Lys Ala Cys Glu Leu Trp Glu Gln Ile Leu Gln Asp
122                                127                                132                                137

cac ccg aca gac atg ttg gcc ctg aaa ttt tcc cat gat gct tat ttt      542
His Pro Thr Asp Met Leu Ala Leu Lys Phe Ser His Asp Ala Tyr Phe
138                                143                                148                                153

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ccc ttc tgg aca cct gac atc ccc cta agc agc tat gtg aaa ggc atc	638
Pro Phe Trp Thr Pro Asp Ile Pro Leu Ser Ser Tyr Val Lys Gly Ile	
170 175 180 185	
tac tct ttt ggc ttg atg gaa acc aac ttc tac gac cag gca gaa aaa	686
Tyr Ser Phe Gly Leu Met Glu Thr Asn Phe Tyr Asp Gln Ala Glu Lys	
186 191 196 201	
ctc gcc aaa gag gct tta tct att aac ccg aca gac gca tgg tgc gtg	734
Leu Ala Lys Glu Ala Leu Ser Ile Asn Pro Thr Asp Ala Trp Ser Val	
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cac acc gtc gct cac atc cac gag atg aaa gca gag atc aag gat ggg	782
His Thr Val Ala His Ile His Glu Met Lys Ala Glu Ile Lys Asp Gly	
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Leu Glu Phe Met Gln His Ser Glu Thr Leu Trp Lys Asp Ser Asp Met	
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Leu Ala Cys His Asn Tyr Trp His Trp Ala Leu Tyr Leu Ile Glu Lys	
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Gly Glu Tyr Glu Ala Ala Leu Thr Ile Tyr Asp Thr His Ile Leu Pro	
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Gln Asp Val Leu Pro Val Ala Arg Lys His Ser Arg Asp His Ile Leu	
314 319 324 329	
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ccc ctg tgc cag gcc ctg gtg gag gct gag gac ggg aac cct gac cgc	1262

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Ile Arg Lys Lys Tyr Pro Asp Arg Val Pro Val Ile Val Glu Lys Ala		
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Pro Lys Ala Arg Val Pro Asp Leu Asp Lys Arg Lys Tyr Leu Val Pro		
37 42 47 52		
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Ser Asp Leu Thr Val Gly Gln Phe Tyr Phe Leu Ile Arg Lys Arg Ile		
53 58 63 68		
cac ctg aga cct gag gac gcc tta ttc ttc ttt gtc aac aac acc atc		533
His Leu Arg Pro Glu Asp Ala Leu Phe Phe Phe Val Asn Asn Thr Ile		
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Pro Pro Thr Ser Ala Thr Met Gly Gln Leu Tyr Glu Asp Asn His Glu		
85 90 95 100		
gaa gac tat ttt ctg tat gtg gcc tac agt gat gag agt gtc tat ggg		629
Glu Asp Tyr Phe Leu Tyr Val Ala Tyr Ser Asp Glu Ser Val Tyr Gly		
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Lys *		
117		
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acgcctccgc cgccgcctga ggaggcgagc tatccgggag ttacaccgcc accgccagg 179
atg gat aga atg aca gaa gat gct ctt cgc ttg aat ctg ttg aag cgg 227
Met Asp Arg Met Thr Glu Asp Ala Leu Arg Leu Asn Leu Leu Lys Arg
1 5 10 15
agc ttg gac cca gca gat gag cga gat gat gtc ctg gca aag cga ctc 275
Ser Leu Asp Pro Ala Asp Glu Arg Asp Asp Val Leu Ala Lys Arg Leu
17 22 27 32
aaa atg gag ggg cat gag gcc atg gaa cgt ctg aaa atg ttg gca ttg 323
Lys Met Glu Gly His Glu Ala Met Glu Arg Leu Lys Met Leu Ala Leu
33 38 43 48
ctc aaa agg aag gat ttg gca aat ctt gag gtg cca cat gag tta ccc 371

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Thr	Lys	Gln	Asp	Gly	Ser	Gly	Val	Lys	Gly	Tyr	Glu	Glu	Lys	Leu	Asn		
65					70					75					80		
ggg	aat	ctc	agg	cct	cat	gga	gac	aac	agg	act	gct	gga	agg	cca	ggc		467
Gly	Asn	Leu	Arg	Pro	His	Gly	Asp	Asn	Arg	Thr	Ala	Gly	Arg	Pro	Gly		
81					86					91					96		
aaa	gaa	aac	atc	aat	gat	gag	cct	gtg	gat	atg	agt	gct	aga	cgg	agt		515
Lys	Glu	Asn	Ile	Asn	Asp	Glu	Pro	Val	Asp	Met	Ser	Ala	Arg	Arg	Ser		
97					102					107					112		
gag	cca	gag	cga	gga	agg	cta	act	ccc	tca	cca	gac	atc	att	gtt	ttg		563
Glu	Pro	Glu	Arg	Gly	Arg	Leu	Thr	Pro	Ser	Pro	Asp	Ile	Ile	Val	Leu		
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Ser	Asp	Asn	Glu	Ala	Ser	Ser	Pro	Arg	Ser	Ser	Ser	Arg	Met	Glu	Glu		
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Pro	His	Met	Leu	Met	Ser	Gln	Arg	Val	Ile	Ala	Pro	Asn	Pro	Ala	Gln		
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Ser Val Pro Cys Gln Arg Thr Thr Ser Ser	Ala Ile Tyr Met Asn Leu			
305	310	315	320	
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Ala Ser His Ile Gln Pro Gly Thr Val Asn Arg	Val Ser Ser Pro Leu			
321	326	331	336	
cct agc ccc agc gcc atg act gat gct gcc	aac tca cag gct gca gcc	1235		
Pro Ser Pro Ser Ala Met Thr Asp Ala Ala	Asn Ser Gln Ala Ala Ala			
337	342	347	352	
aaa ttg gct ctt cgc aaa cag ctg gaa aag	aca ctc ctg gag atc cca	1283		
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353	358	363	368	
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Pro Pro Lys Pro Pro Ala Pro Leu Leu His	Phe Leu Pro Ser Ala Ala			
369	374	379	384	
aat agc gag ttc atc tac atg gta ggc ttg	gaa gaa gtc gta cag agt	1379		
Asn Ser Glu Phe Ile Tyr Met Val Gly Leu	Glu Glu Val Val Gln Ser			
385	390	395	400	
gtc att gac agc caa ggc aaa agc tgt gcc	tca ctt ctg cgg gtt gaa	1427		
Val Ile Asp Ser Gln Gly Lys Ser Cys Ala	Ser Leu Leu Arg Val Glu			
401	406	411	416	
ccc ttt gta tgt gcc cag tgc cgc aca gat	ttc acc cct cac tgg aag	1475		
Pro Phe Val Cys Ala Gln Cys Arg Thr Asp	Phe Thr Pro His Trp Lys			
417	422	427	432	
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433	438	443	448	
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Gln Lys Lys Ala Leu Lys Ala Glu His Thr	Asn Arg Leu Lys Asn Ala			
449	454	459	464	
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Phe Val Lys Ala Leu Gln Gln Glu Gln Val	Arg Ile Leu Thr Ala His			
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Trp Pro Pro Val Pro Val Cys Phe Phe Gln	Arg Val Ala Pro Ser Ser			
481	486	491	496	
ttg cag gag tgg ttc atg tga tc cctacagg	gtc cacagggttcc ctttttgtct	1720		
Leu Gln Glu Trp Phe Met *				
497	502			

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ccttatcatt gtgtcctatt tccatttgag cgagtattct gattaagaac atggtaaaat 1780
ataatggctg aggttaacag aaagggacag aaagcttggg actcttggct tttccatagc 1840
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acgaaagaaa gagtgaatta tgaagtagcc cagtgaagag tagtggttct agagtatgtg 2020
aacatctcat gtagcagtta taggatgaga atatcttaga gaaggaaaaa tgtgttggga 2080
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<222> (176) .. (2176)

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ggtgactctt ggggccgaag gggacggacg tcctcccacg taccatttag aagaa atg 178
Met
1
gag caa gag cca caa aat gga gaa cct gct gaa att aag atc atc aga 226
Glu Gln Glu Pro Gln Asn Gly Glu Pro Ala Glu Ile Lys Ile Ile Arg
2 7 12 17
gaa gca tat aag aag gcc ttt tta ttt gtt aac aaa ggt ctg aat aca 274
Glu Ala Tyr Lys Lys Ala Phe Leu Phe Val Asn Lys Gly Leu Asn Thr
18 23 28 33
gat gaa tta ggt cag aag gaa gaa gca aag aac tac tat aag caa gga 322
Asp Glu Leu Gly Gln Lys Glu Glu Ala Lys Asn Tyr Tyr Lys Gln Gly
34 39 44 49
ata gga cac ctg ctc aga ggg atc agc att tca tca aaa gag tct gaa 370
Ile Gly His Leu Leu Arg Gly Ile Ser Ile Ser Ser Lys Glu Ser Glu
50 55 60 65
cac aca ggt cct ggg tgg gaa tct gct aga cag atg caa cag aaa atg 418
His Thr Gly Pro Gly Trp Glu Ser Ala Arg Gln Met Gln Gln Lys Met
66 71 76 81
aaa gaa act cta cag aat gta cgc acc agg ctg gaa att cta gag aag 466

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Lys	Glu	Thr	Leu	Gln	Asn	Val	Arg	Thr	Arg	Leu	Glu	Ile	Leu	Glu	Lys	
82					87					92					97	
ggg	ctt	gcc	act	tct	ctg	cag	aat	gat	ctt	cag	gag	gtg	ccc	aag	tta	514
Gly	Leu	Ala	Thr	Ser	Leu	Gln	Asn	Asp	Leu	Gln	Glu	Val	Pro	Lys	Leu	
98					103					108					113	
tat	cca	gaa	ttt	cca	cct	aaa	gac	atg	tgt	gaa	aaa	tta	cca	gag	cct	562
Tyr	Pro	Glu	Phe	Pro	Pro	Lys	Asp	Met	Cys	Glu	Lys	Leu	Pro	Glu	Pro	
114					119					124					129	
cag	tct	ttt	agt	tca	gct	cct	cag	cat	gct	gaa	gta	aat	gga	aac	acc	610
Gln	Ser	Phe	Ser	Ser	Ala	Pro	Gln	His	Ala	Glu	Val	Asn	Gly	Asn	Thr	
130					135					140					145	
tca	act	cca	agt	gca	ggg	gca	gtt	gct	gca	cct	gct	tct	ctg	tct	tta	658
Ser	Thr	Pro	Ser	Ala	Gly	Ala	Val	Ala	Ala	Pro	Ala	Ser	Leu	Ser	Leu	
146					151					156					161	
cca	tca	caa	agt	tgt	cca	gca	gaa	gct	cct	cct	gct	tat	act	cct	caa	706
Pro	Ser	Gln	Ser	Cys	Pro	Ala	Glu	Ala	Pro	Pro	Ala	Tyr	Thr	Pro	Gln	
162					167					172					177	
gct	gct	gaa	ggg	cac	tac	act	gta	tcc	tat	gga	aca	gat	tct	ggg	gag	754
Ala	Ala	Glu	Gly	His	Tyr	Thr	Val	Ser	Tyr	Gly	Thr	Asp	Ser	Gly	Glu	
178					183					188					193	
ttt	tca	tca	gtt	gga	gag	gag	ttt	tat	agg	aat	cat	tct	cag	cca	ccg	802
Phe	Ser	Ser	Val	Gly	Glu	Glu	Phe	Tyr	Arg	Asn	His	Ser	Gln	Pro	Pro	
194					199					204					209	
cct	ctt	gag	acc	tta	ggg	ctg	gat	gca	gat	gaa	ttg	att	ttg	ata	cca	850
Pro	Leu	Glu	Thr	Leu	Gly	Leu	Asp	Ala	Asp	Glu	Leu	Ile	Leu	Ile	Pro	
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Asn	Gly	Val	Gln	Ile	Phe	Phe	Val	Asn	Pro	Ala	Gly	Glu	Val	Ser	Ala	
226					231					236					241	
cct	tcg	tat	cct	ggg	tac	ctt	cga	att	gtg	agg	ttt	ttg	gat	aat	tct	946
Pro	Ser	Tyr	Pro	Gly	Tyr	Leu	Arg	Ile	Val	Arg	Phe	Leu	Asp	Asn	Ser	
242					247					252					257	
ctc	gat	acg	gtt	cta	aac	cgt	cct	ccc	ggg	ttt	ctt	cag	gtt	tgt	gac	994
Leu	Asp	Thr	Val	Leu	Asn	Arg	Pro	Pro	Gly	Phe	Leu	Gln	Val	Cys	Asp	
258					263					268					273	
tgg	tta	tat	cct	cta	gtt	cct	gat	aga	tct	ccg	gtt	ctg	aaa	tgt	act	1042
Trp	Leu	Tyr	Pro	Leu	Val	Pro	Asp	Arg	Ser	Pro	Val	Leu	Lys	Cys	Thr	
274					279					284					289	
gcg	gga	gcc	tac	atg	ttt	cct	gat	aca	atg	cta	caa	gca	gca	gga	tgc	1090
Ala	Gly	Ala	Tyr	Met	Phe	Pro	Asp	Thr	Met	Leu	Gln	Ala	Ala	Gly	Cys	
290					295					300					305	
ttt	gtg	ggg	gtc	gtc	ctg	tcc	tct	gag	tta	cca	gag	gat	gat	aga	gag	1138
Phe	Val	Gly	Val	Val	Leu	Ser	Ser	Glu	Leu	Pro	Glu	Asp	Asp	Arg	Glu	

306	311	316	321	
ctc ttt gag gat ctg tta agg caa atg tct gac ctt cgg ctc cag gcc				1186
Leu Phe Glu Asp Leu Leu Arg Gln Met Ser Asp Leu Arg Leu Gln Ala				
322	327	332	337	
aac tgg aac aga gca gaa gaa gaa aat gaa ttc caa atc cct gga aga				1234
Asn Trp Asn Arg Ala Glu Glu Glu Asn Glu Phe Gln Ile Pro Gly Arg				
338	343	348	353	
act aga ccc tcc tct gac caa cta aaa gaa gcc tct ggc act gat gtg				1282
Thr Arg Pro Ser Ser Asp Gln Leu Lys Glu Ala Ser Gly Thr Asp Val				
354	359	364	369	
aaa cag ttg gac caa ggc aat aag gat gta cgt cat aaa gga aaa cgt				1330
Lys Gln Leu Asp Gln Gly Asn Lys Asp Val Arg His Lys Gly Lys Arg				
370	375	380	385	
gga aaa agg gct aaa gat act tca agt gaa gaa gtt aac ctg agt cac				1378
Gly Lys Arg Ala Lys Asp Thr Ser Ser Glu Glu Val Asn Leu Ser His				
386	391	396	401	
att gta cca tgt gag cca gtt cca gaa gaa aag cca aaa gaa tta cct				1426
Ile Val Pro Cys Glu Pro Val Pro Glu Glu Lys Pro Lys Glu Leu Pro				
402	407	412	417	
gaa tgg agt gaa aaa gtg gct cac aac att ttg tca ggt gct tcc tgg				1474
Glu Trp Ser Glu Lys Val Ala His Asn Ile Leu Ser Gly Ala Ser Trp				
418	423	428	433	
gtg agt tgg ggt tta gtc aaa ggt gct gag att act ggt aag gca atc				1522
Val Ser Trp Gly Leu Val Lys Gly Ala Glu Ile Thr Gly Lys Ala Ile				
434	439	444	449	
cag aaa ggt gct tct aaa ctc cga gag cgg att caa cca gaa gaa aaa				1570
Gln Lys Gly Ala Ser Lys Leu Arg Glu Arg Ile Gln Pro Glu Glu Lys				
450	455	460	465	
ccc gtg gaa gtt agt cca gct gtc acc aag gga ctt tat ata gcg aag				1618
Pro Val Glu Val Ser Pro Ala Val Thr Lys Gly Leu Tyr Ile Ala Lys				
466	471	476	481	
caa gct aca gga gga gca gca aaa gtc agt cag ttc ctg gtt gat gga				1666
Gln Ala Thr Gly Gly Ala Ala Lys Val Ser Gln Phe Leu Val Asp Gly				
482	487	492	497	
gtt tgc act gta gca aat tgc gtt gga aaa gaa cta gct cca cat gtc				1714
Val Cys Thr Val Ala Asn Cys Val Gly Lys Glu Leu Ala Pro His Val				
498	503	508	513	
aag aag cat gga agc aaa ctt gtt cca gaa tct ctt aaa aaa gac aaa				1762
Lys Lys His Gly Ser Lys Leu Val Pro Glu Ser Leu Lys Lys Asp Lys				
514	519	524	529	
gat ggg aaa tct cct ctg gat ggt gct atg gtt gta gca gca agt agt				1810
Asp Gly Lys Ser Pro Leu Asp Gly Ala Met Val Val Ala Ala Ser Ser				
530	535	540	545	

gtt caa gga ttt tca act gtc tgg caa gga ttg gaa tgt gca gct aaa	1858
Val Gln Gly Phe Ser Thr Val Trp Gln Gly Leu Glu Cys Ala Ala Lys	
546 551 556 561	
tgc atc gtt aac aat gtt tca gca gaa act gta caa act gtc aga tac	1906
Cys Ile Val Asn Asn Val Ser Ala Glu Thr Val Gln Thr Val Arg Tyr	
562 567 572 577	
aaa tac gga tat aat gca gga gaa gct acc cac cat gcg gtg gat tct	1954
Lys Tyr Gly Tyr Asn Ala Gly Glu Ala Thr His His Ala Val Asp Ser	
578 583 588 593	
gcg gtc aat gtt ggc gta act gcc tac aat att aac ³ aac att ggt atc	2002
Ala Val Asn Val Gly Val Thr Ala Tyr Asn Ile Asn Asn Ile Gly Ile	
594 599 604 609	
aaa gca atg gtg aag aaa act gca aca caa aca gga cac act ctc ctt	2050
Lys Ala Met Val Lys Lys Thr Ala Thr Gln Thr Gly His Thr Leu Leu	
610 615 620 625	
gag gac tat cag ata gtt gat aat tct cag agg gaa aat caa gaa gga	2098
Glu Asp Tyr Gln Ile Val Asp Asn Ser Gln Arg Glu Asn Gln Glu Gly	
626 631 636 641	
gca gca aat gtc aac gtg aga ggg gag aag gat gag cag acg aag gaa	2146
Ala Ala Asn Val Asn Val Arg Gly Glu Lys Asp Glu Gln Thr Lys Glu	
642 647 652 657	
gta aag gag gca aag aag aaa gat aaa tga t gaagtgtctgg gaatcactta	2197
Val Lys Glu Ala Lys Lys Lys Asp Lys *	
658 663	
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agattaacca gtatttttta aatgtattca ttctacaaa ttaactttca taaattttat	2317
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atatctgctg tctttcagaa ggcaaatagg aaactatata tttgcttaaa aattggcatt	2557
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taaaactaag aattctcaaa aaaacttggt caaacaggg aaagactgat gaaaagtaaa	2737
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atgaataaaa atagattatt acgtcttttg tattgagact ¹ gtattgttat gagcctagga	2857
aatttgggaa catgattgta ttgtattaaa attcgaagtg attattatca gcttaattgg	2917

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attaaaaaag tacttcaaga aattatttta tcatatctgc ttctgttttt ccaaaagggt 2977
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tgtgggagct aaaaattaca aataatcaaa cttaaggaga tagagagtag aatgatgggt 3637
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cagaggctaa gacccatccc gtatctgctc tcttgaaata attctggagt c atg cct 177
Met Pro
1
gaa atg cca gag gac atg gag cag gag gaa gtt aac atc cct aat agg 225
Glu Met Pro Glu Asp Met Glu Gln Glu Glu Val Asn Ile Pro Asn Arg
3 8 13 18
agg gtt ctg gtt act ggt gcc act ggg ctt ctt ggc aga gct gta cac 273
Arg Val Leu Val Thr Gly Ala Thr Gly Leu Leu Gly Arg Ala Val His
19 24 29 34
/
aaa gaa ttt cag cag aat aat tgg cat gca gtt ggc tgt ggt ttc aga 321
Lys Glu Phe Gln Gln Asn Asn Trp His Ala Val Gly Cys Gly Phe Arg

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35	40	45	50	
aga gca aga cca aaa ttt gaa cag gtt aat ctg ttg gat tct aat gca				369
Arg Ala Arg Pro Lys Phe Glu Gln Val Asn Leu Leu Asp Ser Asn Ala				
51	56	61	66	
ggt cat cac atc att cat gat ttt cag ccc cat gtt ata gta cat tgt				417
Val His His Ile Ile His Asp Phe Gln Pro His Val Ile Val His Cys				
67	72	77	82	
gca gca gag aga aga cca gat gtt gta gaa aat cag cca gat gct gcc				465
Ala Ala Glu Arg Arg Pro Asp Val Val Glu Asn Gln Pro Asp Ala Ala				
83	88	93	98	
tct caa ctt aat gtg gat gct tct ggg aat tta gca aag gaa gca gct				513
Ser Gln Leu Asn Val Asp Ala Ser Gly Asn Leu Ala Lys Glu Ala Ala				
99	104	109	114	
gct gtt gga gca ttt ctc atc tac att agc tca gat tat gta ttt gat				561
Ala Val Gly Ala Phe Leu Ile Tyr Ile Ser Ser Asp Tyr Val Phe Asp				
115	120	125	130	
gga aca aat cca cct tac aga gag gaa gac ata cca gct ccc cta aat				609
Gly Thr Asn Pro Pro Tyr Arg Glu Glu Asp Ile Pro Ala Pro Leu Asn				
131	136	141	146	
ttg tat ggc aaa aca aaa tta gat gga gaa aag gct gtc ctg gag aac				657
Leu Tyr Gly Lys Thr Lys Leu Asp Gly Glu Lys Ala Val Leu Glu Asn				
147	152	157	162	
aat cta gga gct gct gtt ttg agg att cct att ctg tat ggg gaa gtt				705
Asn Leu Gly Ala Ala Val Leu Arg Ile Pro Ile Leu Tyr Gly Glu Val				
163	168	173	178	
gaa aag ctc gaa gaa agt gct gtg act gtt atg ttt gat aaa gtg cag				753
Glu Lys Leu Glu Glu Ser Ala Val Thr Val Met Phe Asp Lys Val Gln				
179	184	189	194	
ttc agc aac aag tca gca aac atg gat cac tgg cag cag agg ttc ccc				801
Phe Ser Asn Lys Ser Ala Asn Met Asp His Trp Gln Gln Arg Phe Pro				
195	200	205	210	
aca cat gtc aaa gat gtg gcc act gtg tgc cgg cag cta gca gag aag				849
Thr His Val Lys Asp Val Ala Thr Val Cys Arg Gln Leu Ala Glu Lys				
211	216	221	226	
aga atg ctg gat cca tca att aag gga acc ttt cac tgg tct ggc aat				897
Arg Met Leu Asp Pro Ser Ile Lys Gly Thr Phe His Trp Ser Gly Asn				
227	232	237	242	
gaa cag atg act aag tat gaa atg gca tgt gca att gca gat gcc ttc				945
Glu Gln Met Thr Lys Tyr Glu Met Ala Cys Ala Ile Ala Asp Ala Phe				
243	248	253	258	
aac ctc ccc agc agt cac tta aga cct att act gac agc cct gtc cta				993
Asn Leu Pro Ser Ser His Leu Arg Pro Ile Thr Asp Ser Pro Val Leu				
259	264	269	274	

gga gca caa cgt ccg aga aat gct cag ctt gac tgc tcc aaa ttg gag	1041
Gly Ala Gln Arg Pro Arg Asn Ala Gln Leu Asp Cys Ser Lys Leu Glu	
275 280 285 290	
acc ttg ggc att ggc caa cga aca cca ttt cga att gga atc aaa gaa	1089
Thr Leu Gly Ile Gly Gln Arg Thr Pro Phe Arg Ile Gly Ile Lys Glu	
291 296 301 306	
tca ctt tgg cct ttc ctc att gac aag aga tgg aga caa acg gtc ttt	1137
Ser Leu Trp Pro Phe Leu Ile Asp Lys Arg Trp Arg Gln Thr Val Phe	
307 312 317 322	
cat tag tttatttgtg ttgggttctt tttttttttt aaatgaaaag tatagtatgt	1193
His *	
323	
ggcacttttt aaagaacaaa ggaaatagtt ttgtatgagt actttaattg tgactcttag	1253
gatctttcag gtaaatgatg ctcttgcaact agtgaaattg tctaaagaaa ctaaagggca	1313
gtcatgccct gtttgcagta atttttcttt ttatcatttt gtttgtcctg gctaaacttg	1373
gagtttgagt atagtaaatt atgataccta aatatttgag agtcaggatg aagcagatct	1433
gctgtagact tttcagatga aattgttcat tctcgtaacc tccatatttt caggattttt	1493
gaagctgttg accttttcat gttgattatt ttaaattgtg tgaaatagta taaaaatcat	1553
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cgtgtgtaca tgtatttttt ttctaggcaa acattgaatg caaacgtgta tttttttaat	1793
ataaatatat aactgtcctt ttcatacccat gttgccgcta agtgatattt catatgtgtg	1853
gttatactca taataatggg ccttgaagt cttttcacca ttcatgaata ataataaata	1913
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Met Glu Asp

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4 9 14 19	
ccg cca gct gca ggc cag gga gga gcc ctg gtg gag ctc acc ccg acc	153
Pro Pro Ala Ala Gly Gln Gly Gly Ala Leu Val Glu Leu Thr Pro Thr	
20 25 30 35	
ccc ggc ggc ctg gcc ctg gtg agc ccc tac cac acc cac cgg gcc ggg	201
Pro Gly Gly Leu Ala Leu Val Ser Pro Tyr His Thr His Arg Ala Gly	
36 41 46 51	
gac ccc tta gac ctc gtg gcg ctc gca gag cag gtg cag aag gct gat	249
Asp Pro Leu Asp Leu Val Ala Leu Ala Glu Gln Val Gln Lys Ala Asp	
52 57 62 67	
gaa ttc atc cga gca aat gcc acc aac aag ctg aca gtc ata gct gag	297
Glu Phe Ile Arg Ala Asn Ala Thr Asn Lys Leu Thr Val Ile Ala Glu	
68 73 78 83	
caa atc caa cat ttg caa gaa caa gcc agg aag gta ctg gaa gat gct	345
Gln Ile Gln His Leu Gln Glu Gln Ala Arg Lys Val Leu Glu Asp Ala	
84 89 94 99	
cac aga gat gcc aac ctg cac cat gta gct tgt aat ata gtg aaa aaa	393
His Arg Asp Ala Asn Leu His His Val Ala Cys Asn Ile Val Lys Lys	
100 105 110 115	
cct ggc aac att tac tat ctc tat aaa cgg gag agt ggt cag cag tat	441
Pro Gly Asn Ile Tyr Tyr Leu Tyr Lys Arg Glu Ser Gly Gln Gln Tyr	
116 121 126 131	
ttt tcc atc att tct cca aag gaa tgg ggg aca agt tgt cca cat gac	489
Phe Ser Ile Ile Ser Pro Lys Glu Trp Gly Thr Ser Cys Pro His Asp	
132 137 142 147	
ttc ctt ggt gcc tac aaa cta cag cat gac ttg tcc tgg act ccg tat	537
Phe Leu Gly Ala Tyr Lys Leu Gln His Asp Leu Ser Trp Thr Pro Tyr	
148 153 158 163	
gag gac att gag aag caa gat gct aaa atc agc atg atg gac acg ttg	585
Glu Asp Ile Glu Lys Gln Asp Ala Lys Ile Ser Met Met Asp Thr Leu	
164 169 174 179	
cta agc cag tca gtg gcc ctg cct ccg tgc act gaa ccc aac ttc cag	633
Leu Ser Gln Ser Val Ala Leu Pro Pro Cys Thr Glu Pro Asn Phe Gln	
180 185 190 195	
gga ctg act cac tga gagggttgacaaacag ctctcacagg acctggctgt	688
Gly Leu Thr His *	
196	
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790

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<222> (365)..(835)

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ggtgagggaa ggtgcgacct gaatgttctc cctgacctcc tagtttctta gtcttgacag	180
ttctattctt cccaggggtca cattcaccac acccaccac tctgttcatt cccttccctt	240
tcaccccttc tgtctcattt agtccactt tgaaaaaact gtggcatcaa aggtccctgg	300
gtagtccctt cccaaatggt ccgctgcttg gaactctaaa tgccaccctg gagcggggagc	360
cgca atg gca cgg cag cac gcc cgg acc ttg tgg tac gac agg ccc agg	409
Met Ala Arg Gln His Ala Arg Thr Leu Trp Tyr Asp Arg Pro Arg	
1 5 10	
tat gtg ttc atg gag ttt tgt gtt gag gac agc acc gat gtc cac gtg	457
Tyr Val Phe Met Glu Phe Cys Val Glu Asp Ser Thr Asp Val His Val	
16 21 26 31	
ctt att gag gat cac cgc att gtg ttc agc tgc aag aat gcc gat gga	505
Leu Ile Glu Asp His Arg Ile Val Phe Ser Cys Lys Asn Ala Asp Gly	
32 37 42 47	
gtg gag ttg tac aat gag att gag ttc tat gcc aaa gtg aac tcc aag	553
Val Glu Leu Tyr Asn Glu Ile Glu Phe Tyr Ala Lys Val Asn Ser Lys	
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Asp Ser Gln Asp Lys Arg Ser Ser Arg Ser Ile Thr Cys Phe Val Arg	
64 69 74 79	
aaa tgg aag gaa aag gtg gcc tgg ccg cgg ctt acc aag gag gat atc	649
Lys Trp Lys Glu Lys Val Ala Trp Pro Arg Leu Thr Lys Glu Asp Ile	
80 85 90 95	
aag cca gtg tgg ctg tct gtg gac ttt gat aac tgg aga gac tgg gaa	697
Lys Pro Val Trp Leu Ser Val Asp Phe Asp Asn Trp Arg Asp Trp Glu	
96 101 106 111	
ggg gat gaa gag atg gag ctg gct cat gtg gaa cat tat gca gag ctt	745
Gly Asp Glu Glu Met Glu Leu Ala His Val Glu His Tyr Ala Glu Leu	

112	117	122	127	
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Leu Lys Lys Val Ser Thr Lys Arg Pro Pro Pro Ala Met Asp Asp Leu				
128	133	138	143	
gat gat gat tct gac agt gct gat gat gca aca agt aat taa cttctg				842
Asp Asp Asp Ser Asp Ser Ala Asp Asp Ala Thr Ser Asn *				
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Ala Met Ala Ala Ala Ala Gly Gly Gly Ala Gly Ala Ala Arg Ser Leu	
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Ser Arg Phe Arg Gly Cys Leu Ala Gly Ala Leu Leu Gly Asp Cys Val	
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ggc tcc ttc tac gag gcc cac gac acc gtc gac ctg acg tca gtc ctg	259
Gly Ser Phe Tyr Glu Ala His Asp Thr Val Asp Leu Thr Ser Val Leu	
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Arg His Val Gln Ser Leu Glu Pro Asp Pro Gly Thr Pro Gly Ser Glu	
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ctg gtg cag tcc ctg cta gcc aag gag gcc ttt gac gag gtg gac atg	403
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Glu Arg Asp Ala Gln Phe Thr Gln Arg Lys Ala Glu Arg Ala Thr Leu	
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Arg Ser His Phe Arg Asp Lys Tyr Arg Leu Pro Lys Asn Glu Thr Asp	
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Glu Ser Gln Ile Gln Met Ala Gly Gly Asp Val Glu Leu Pro Arg Glu	
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Glu Lys Cys His Val Met *	
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 Met Ile
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 Leu Leu Asn Thr Gly Leu Glu Gly Thr Val Ala Glu Asn Pro Val Pro
 3 8 13 18

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 Ile Val His Thr Pro Ser Gly Asn Ile Leu Thr Leu Glu Ser Cys Leu
 19 24 29 34

cag cag ctg gcc aca cat ccc gga cac tgg ggc atc cat ttg caa ata 559
 Gln Gln Leu Ala Thr His Pro Gly His Trp Gly Ile His Leu Gln Ile
 35 40 45 50

gcg gag ccc gca gcc ctc cgg cca tcc ctg gcc ttg ctg gca cgc ctc 607
 Ala Glu Pro Ala Ala Leu Arg Pro Ser Leu Ala Leu Leu Ala Arg Leu
 51 56 61 66

tcc agc ctt ggc ctc ttg cat tgg cct gtg tgg gtt ggg gcc aaa atc 655
 Ser Ser Leu Gly Leu Leu His Trp Pro Val Trp Val Gly Ala Lys Ile
 67 72 77 82

tcc cac ggg agt ttt tgc gtc ccc ggc cat gtg gct ggc aga gag ctg 703
 Ser His Gly Ser Phe Ser Val Pro Gly His Val Ala Gly Arg Glu Leu
 83 88 93 98

ctt aca gct gtg gct gag gtc ttc ccc cac gtg act gtg gca cca ggc 751
 Leu Thr Ala Val Ala Glu Val Phe Pro His Val Thr Val Ala Pro Gly
 99 104 109 114

tgg cct gag gag gtg ctg ggc agt ggc tac agg gaa cag ctg ctc aca 799
 Trp Pro Glu Glu Val Leu Gly Ser Gly Tyr Arg Glu Gln Leu Leu Thr
 115 120 125 130

gat atg cta gag ttg tgc cag ggg ctc tgg caa cct gtg tcc ttc cag 847
 Asp Met Leu Glu Leu Cys Gln Gly Leu Trp Gln Pro Val Ser Phe Gln
 131 136 141 146

atg cag gcc atg ctg ctg ggc cac agc aca gct gga gcc ata ggc agg 895
 Met Gln Ala Met Leu Leu Gly His Ser Thr Ala Gly Ala Ile Gly Arg

Glu Tyr Pro Leu Val Ile Asn Thr Leu Lys Arg Phe Asn Leu Tyr Pro	
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Glu Val Ile Leu Ala Ser Trp Tyr Arg Ile Tyr Thr Lys Ile Met Asp	
53 58 63 68	
ttg att ggt att caa acc aag ata tgt tgg acg gtt acc aga gga gaa	413
Leu Ile Gly Ile Gln Thr Lys Ile Cys Trp Thr Val Thr Arg Gly Glu	
69 74 79 84	
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Gly Leu Ser Pro Ile Glu Ser Cys Glu Gly Leu Gly Asp Pro Ala Cys	
85 90 95 100	
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Phe Tyr Val Ala Val Ile Phe Ile Leu Asn Gly Leu Met Met Ala Leu	
101 106 111 116	
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Phe Phe Ile Tyr Gly Thr Tyr Leu Ser Gly Ser Arg Leu Gly Gly Leu	
117 122 127 132	
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Val Thr Val Leu Cys Phe Phe Phe Asn His Gly Glu Cys Thr Arg Val	
133 138 143 148	
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Met Trp Thr Pro Pro Leu Arg Glu Ser Phe Ser Tyr Pro Phe Leu Val	
149 154 159 164	
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Leu Gln Met Leu Leu Val Thr His Ile Leu Arg Ala Thr Lys Leu Tyr	
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Pro Trp Gln Phe Ala Gln Phe Val Leu Leu Thr Gln Ile Ala Ser Leu	
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Phe Ala Val Tyr Val Val Gly Tyr Ile Asp Ile Cys Lys Leu Arg Lys	
213 218 223 228	
atc att tat ata cac atg att tct ctt gca ctt tgt ttt gtt ttg atg	893
Ile Ile Tyr Ile His Met Ile Ser Leu Ala Leu Cys Phe Val Leu Met	
229 234 239 244	
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Phe Gly Asn Ser Met Leu Leu Thr Ser Tyr Tyr Ala Ser Ser Leu Val	
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Ile Ile Trp Gly Ile Leu Ala Met Lys Pro His Phe Leu Lys Ile Asn	

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Val Ser Glu Leu Ser Leu Trp Val Ile Gln Gly Cys Phe Trp Leu Phe				
277	282	287	292	
gga act gtc ata ctt aaa tac ttg aca tct aaa att ttt ggt att gca				1085
Gly Thr Val Ile Leu Lys Tyr Leu Thr Ser Lys Ile Phe Gly Ile Ala				
293	298	303	308	
gat gac gct cat att ggc aac tta cta aca tca aaa ttc ttt agt tat				1133
Asp Asp Ala His Ile Gly Asn Leu Leu Thr Ser Lys Phe Phe Ser Tyr				
309	314	319	324	
aag gat ttt gat act tta ttg tat acc tgt gca gcg gag ttt gac ttt				1181
Lys Asp Phe Asp Thr Leu Leu Tyr Thr Cys Ala Ala Glu Phe Asp Phe				
325	330	335	340	
atg gaa aaa gag act cca ctg aga tac aca aag aca tta ttg ctt cca				1229
Met Glu Lys Glu Thr Pro Leu Arg Tyr Thr Lys Thr Leu Leu Leu Pro				
341	346	351	356	
gtt gtt ctt gta gtg ttt gtt gct att gtt aga aag att att agt gat				1277
Val Val Leu Val Val Phe Val Ala Ile Val Arg Lys Ile Ile Ser Asp				
357	362	367	372	
atg tgg ggt gtc tta gct aaa caa cag aca cat gta aga aaa cac cag				1325
Met Trp Gly Val Leu Ala Lys Gln Gln Thr His Val Arg Lys His Gln				
373	378	383	388	
ttt gat cat gga gag ctg gtt tac cat gca ttg caa ttg tta gca tat				1373
Phe Asp His Gly Glu Leu Val Tyr His Ala Leu Gln Leu Leu Ala Tyr				
389	394	399	404	
aca gcc ctt ggt att tta att atg aga cta aaa ctc ttc ttg aca cca				1421
Thr Ala Leu Gly Ile Leu Ile Met Arg Leu Lys Leu Phe Leu Thr Pro				
405	410	415	420	
cac atg tgt gtt atg gca tca ctg atc tgc tca aga cag cta ttt gga				1469
His Met Cys Val Met Ala Ser Leu Ile Cys Ser Arg Gln Leu Phe Gly				
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Trp Leu Phe Cys Lys Val His Pro Gly Ala Ile Val Phe Ala Ile Leu				
437	442	447	452	
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Ala Ala Met Ser Ile Gln Gly Ser Ala Asn Leu Gln Thr Gln Trp Asn				
453	458	463	468	
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Ile Val Gly Glu Phe Ser Asn Leu Pro Gln Glu Glu Leu Ile Glu Trp				
469	474	479	484	
atc aaa tat agt act aaa cca gat gca gtg ttt gcg ggt gcc atg ccc				1661
Ile Lys Tyr Ser Thr Lys Pro Asp Ala Val Phe Ala Gly Ala Met Pro				
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Thr Met Ala Ser Val Lys Leu Ser Ala Leu Arg Pro Ile Val Asn His	
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Pro His Tyr Glu Asp Ala Gly Leu Arg Ala Arg Thr Lys Ile Val Tyr	
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Arg Ser Lys Pro Gly Cys Ser Met Pro Glu Ile Trp Asp Val Glu Asp	
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Pro Ala Asn Ala Gly Lys Thr Pro Leu Cys Asn Leu Leu Val Lys Asp	
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Arg Leu Leu Tyr Leu Lys Lys Lys Ser Gly Ala Thr Glu Glu Arg Lys
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Pro Ala Glu Val Leu Ile Val Glu Gly Gln Gln Tyr Ala Val Val Gly
19 24 29 34
acc gta ttg ctg tta ata aga att atc ctt gaa tat tgc cag tgt gtg 320
Thr Val Leu Leu Leu Ile Arg Ile Ile Leu Glu Tyr Cys Gln Cys Val
35 40 45 50
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Asp Asn Ile Pro Ser Val Thr Thr Asp Met Leu Thr Arg Leu Ser Asp
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Leu Leu Lys Tyr Phe Asn Ser Arg Ser Cys Gln Leu Val Leu Gly Ala
67 72 77 82
ggg gca ctg caa gtt gtt gga cta aaa acg ata act aca aaa aat ttg 464
Gly Ala Leu Gln Val Val Gly Leu Lys Thr Ile Thr Thr Lys Asn Leu
83 88 93 98
gct ctt tct tca cga tgt ttg cag tta att gtg cac tac att cct gtg 512
Ala Leu Ser Ser Arg Cys Leu Gln Leu Ile Val His Tyr Ile Pro Val
99 104 109 114

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Ile Arg Ala His Phe Glu Ala Arg Leu Pro Pro Lys Gln Tyr Ser Met	
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ctt agg cat ttt gat cat atc act aag gac tac cat gat cac ata gct	608
Leu Arg His Phe Asp His Ile Thr Lys Asp Tyr His Asp His Ile Ala	
131 136 141 146	
gaa ata tca gct aag ctt gta gcg ata atg gat agc tta ttt gac aag	656
Glu Ile Ser Ala Lys Leu Val Ala Ile Met Asp Ser Leu Phe Asp Lys	
147 152 157 162	
ctg tta tct aag tat gaa gtg aag gct cct gtt cct tct gcc tgt ttc	704
Leu Leu Ser Lys Tyr Glu Val Lys Ala Pro Val Pro Ser Ala Cys Phe	
163 168 173 178	
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Arg Asn Ile Cys Lys Gln Met Thr Lys Met His Glu Ala Ile Phe Asp	
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Ser Tyr Lys Leu His Leu Lys Lys Gln Leu Ser His Leu Asn Val Ile	
211 216 221 226	
aat gat gga gga cct caa aat ggg ttg gtc aca gca gat gta gct ttt	896
Asn Asp Gly Gly Pro Gln Asn Gly Leu Val Thr Ala Asp Val Ala Phe	
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tac act gga aat ctt caa gcc tta aaa ggc ctt aaa gat ttg gac cta	944
Tyr Thr Gly Asn Leu Gln Ala Leu Lys Gly Leu Lys Asp Leu Asp Leu	
243 248 253 258	
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Asn Met Ala Glu Ile Trp Glu Gln Lys Arg *	
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 Met Ala Ser Asp Gly Ala Arg Lys Gln Phe Trp Lys
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 cgc agc aac agc aag ctc ccg ggc agc atc cag cac gtg tat ggt gcc 276
 Arg Ser Asn Ser Lys Leu Pro Gly Ser Ile Gln His Val Tyr Gly Ala
 13 18 23 28
 cag cac ccc ccc ttt gat cca ctg tta cat ggc act ttg ctc agg tcc 324
 Gln His Pro Pro Phe Asp Pro Leu Leu His Gly Thr Leu Leu Arg Ser
 29 34 39 44
 acg gcc aag atg ccg acc aca cca gtg aag gcc aag agg gtc agc acc 372
 Thr Ala Lys Met Pro Thr Thr Pro Val Lys Ala Lys Arg Val Ser Thr
 45 50 55 60
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 Phe Gln Glu Phe Glu Ser Asn Thr Ser Asp Ala Trp Asp Ala Gly Glu

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Asp Asp Asp Glu Leu	Leu Ala Met Ala Ala Glu Ser Leu Asn Ser Glu						
77	82	87	92				
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Val Val Met Glu Thr	Ala Asn Arg Val Leu Arg Asn His Ser Gln Arg						
93	98	103	108				
cag ggg cgg ccc acg	ctg cag gag ggg cca ggg ctt cag cag aag ccc						564
Gln Gly Arg Pro Thr	Leu Gln Glu Gly Pro Gly Leu Gln Gln Lys Pro						
109	114	119	124				
agg ccc gag gca gag	ccg ccc tca ccc ccc agc ggc gac ctc cgg ctg						612
Arg Pro Glu Ala Glu	Pro Pro Ser Pro Pro Ser Gly Asp Leu Arg Leu						
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gtg aag tcg gtc agt	gag agc cac acg tcc tgt cct gca gaa agt gcc						660
Val Lys Ser Val Ser	Glu Ser His Thr Ser Cys Pro Ala Glu Ser Ala						
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agc gat gcc gcc cct	ctg cag agg tcc cag tct ctc cca cac tcg gcc						708
Ser Asp Ala Ala Pro	Leu Gln Arg Ser Gln Ser Leu Pro His Ser Ala						
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Thr Val Thr Leu Gly	Gly Thr Ser Asp Pro Ser Thr Leu Ser Ser Ser						
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Ala Leu Ser Glu Arg	Glu Ala Ser Arg Leu Asp Lys Phe Lys Gln Leu						
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Leu Ala Gly Pro Asn	Thr Asp Leu Glu Glu Leu Arg Arg Leu Ser Trp						
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Ser Gly Ile Pro Lys	Pro Val Arg Pro Met Thr Trp Lys Leu Leu Ser						
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ggc tac ctt ccc gcc	aat gta gac cgg aga cca gcc act ctc cag aga						948
Gly Tyr Leu Pro Ala	Asn Val Asp Arg Arg Pro Ala Thr Leu Gln Arg						
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Lys Gln Lys Glu Tyr	Phe Ala Phe Ile Glu His Tyr Tyr Asp Ser Arg						
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Asn Asp Glu Val His	Gln Asp Thr Tyr Arg Gln Ile His Ile Asp Ile						
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cct cgc atg agc cct	gaa gcg ttg atc ctg cag ccc aag gtg acg gag						1092
Pro Arg Met Ser Pro	Glu Ala Leu Ile Leu Gln Pro Lys Val Thr Glu						
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Gly Tyr Val Gln Gly Ile Asn Asp Leu Val Thr Pro Phe Phe Val Val	
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Phe Ile Cys Glu Tyr Ile Glu Ala Glu Glu Val Asp Thr Val Asp Val	
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Ser Gly Val Pro Ala Glu Val Leu Cys Asn Ile Glu Ala Asp Thr Tyr	
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Trp Cys Met Ser Lys Leu Leu Asp Gly Ile Gln Asp Asn Tyr Thr Phe	
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Ser Arg Ile Asp Glu Gln Val His Arg His Leu Asp Gln His Glu Val	
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Arg Tyr Leu Gln Phe Ala Phe Arg Trp Met Asn Asn Leu Leu Met Arg	
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Glu Val Pro Leu Arg Cys Thr Ile Arg Leu Trp Asp Thr Tyr Gln Ser	
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Glu Pro Asp Gly Phe Ser His Phe His Leu Tyr Val Cys Ala Ala Phe	
445 450 455 460	
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Leu Val Arg Trp Arg Lys Glu Ile Leu Glu Glu Lys Asp Phe Gln Glu	
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Leu Leu Leu Phe Leu Gln Asn Leu Pro Thr Ala His Trp Asp Asp Glu	
477 482 487 492	
gac atc agc ctg ttg ctg gcc gag gcc tac cgc ctc aag ttt gct ttt	1716
Asp Ile Ser Leu Leu Leu Ala Glu Ala Tyr Arg Leu Lys Phe Ala Phe	
493 498 503 508	
gcc gac gcc ccc aat cac tac aag aaa tga g cccaggccca cccgcagctg	1767
Ala Asp Ala Pro Asn His Tyr Lys Lys *	
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Met Gly Ser Arg Asn Ser Ser Ser Ala Gly Ser
1 5
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Gly Ser Gly Asp Pro Ser Glu Gly Leu Pro Arg Arg Gly Ala Gly Leu
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Arg Arg Ser Glu Glu Glu Glu Glu Glu Asp Glu Asp Val Asp Leu Ala
28 33 38 43
cag gta ctg gcc tat ctc ctc cgc aga ggc caa gtg agg ttg gtg cag 376
Gln Val Leu Ala Tyr Leu Leu Arg Arg Gly Gln Val Arg Leu Val Gln
44 49 54 59
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Gly Gly Gly Ala Ala Asn Leu Gln Phe Ile Gln Ala Leu Leu Asp Ser
60 65 70 75
gag gaa gag aat gac aga gct tgg gat ggt cgt ctt ggg gat cga tac 472
Glu Glu Glu Asn Asp Arg Ala Trp Asp Gly Arg Leu Gly Asp Arg Tyr
76 81 86 91
aac cca cct gtg gat gct acc cct gac acc cgg gag ctg gaa ttc aat / 520
Asn Pro Pro Val Asp Ala Thr Pro Asp Thr Arg Glu Leu Glu Phe Asn
92 97 102 107

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Glu Ile Lys Thr Gln Val Glu Leu Ala Thr Gly Gln Leu Gly Leu Arg	
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cgg gcc gcc cag aag cac agc ttt cct cga atg ttg cac cag aga gaa	616
Arg Ala Ala Gln Lys His Ser Phe Pro Arg Met Leu His Gln Arg Glu	
124 129 134 139	
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Arg Gly Leu Cys His Arg Gly Ser Phe Ser Leu Gly Glu Gln Ser Arg	
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Val Ile Ser His Phe Leu Pro Asn Asp Leu Gly Phe Thr Asp Ser Tyr	
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Ser Gln Lys Ala Phe Cys Gly Ile Tyr Ser Lys Asp Gly Gln Ile Phe	
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Met Ser Ala Cys Gln Asp Gln Thr Ile Arg Leu Tyr Asp Cys Arg Tyr	
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Gly Arg Phe His Lys Phe Lys Ser Ile Lys Ala Arg Asp Val Gly Trp	
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acc ctt cag att gag tcc cat gag gat gat gtg aat gca gtg gcc ttt	1144
Thr Leu Gln Ile Glu Ser His Glu Asp Asp Val Asn Ala Val Ala Phe	
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Cys Lys Val Trp Asp Arg Arg Thr Met Arg Glu Asp Asp Pro Lys Pro	
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Val Gly Ala Leu Ala Gly His Gln Asp Gly Ile Thr Phe Ile Asp Ser	
348 353 358 363	
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Lys Gly Asp Ala Arg Tyr Leu Ile Ser Asn Ser Lys Asp Gln Thr Ile	
364 369 374 379	
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Val Pro Lys Lys Ala Trp Arg Lys Leu Lys Leu Pro Gly Asp Ser Ser	
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Leu Met Thr Tyr Arg Gly His Gly Val Leu His Thr Leu Ile Arg Cys	
428 433 438 443	
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Arg Phe Ser Pro Ile His Ser Thr Gly Gln Gln Phe Ile Tyr Ser Gly	
444 449 454 459	
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Cys Ser Thr Gly Lys Val Val Val Tyr Asp Leu Leu Ser Gly His Ile	
460 465 470 475	
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Val Lys Lys Leu Thr Asn His Lys Ala Cys Val Arg Asp Val Ser Trp	
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cac ccc ttt gaa gag aag att gtc agc agt tgc tgg gac ggg aac ctg	1720
His Pro Phe Glu Glu Lys Ile Val Ser Ser Ser Trp Asp Gly Asn Leu	
492 497 502 507	
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Arg Leu Trp Gln Tyr Arg Gln Ala Glu Tyr Phe Gln Asp Asp Met Pro	
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Glu Ser Glu Glu Cys Ala Ser Ala Pro Ala Pro Val Pro Gln Ser Ser	
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Thr Pro Phe Ser Ser Pro Gln *	
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 Met Gly Ser Arg Asn Ser Ser Ser Ala Gly Ser
 1 5
 ggg tcc gga gac ccc tcc gag ggc ttg ccc cga aga ggg gct ggc ctg 280
 Gly Ser Gly Asp Pro Ser Glu Gly Leu Pro Arg Arg Gly Ala Gly Leu
 12 17 22 27
 cgt cgg agt gag gaa gag gaa gaa gag gat gaa gat gtg gat ctg gcc 328
 Arg Arg Ser Glu Glu Glu Glu Glu Asp Glu Asp Val Asp Leu Ala
 28 33 38 43
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                                         Met Ala Ala Cys
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cgt gca tta aaa gct gtt ttg gta gat ctc agt ggc aca ctt cac att      222
Arg Ala Leu Lys Ala Val Leu Val Asp Leu Ser Gly Thr Leu His Ile
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ggg gct tct gta atc att agg ttt gtg acc aat aca acc aaa gag agc      318
Gly Ala Ser Val Ile Ile Arg Phe Val Thr Asn Thr Thr Lys Glu Ser
  37                      42                      47                      52

aag caa gac ctg tta gaa agg ttg aga aaa ttg gaa ttt gat atc tct      366
Lys Gln Asp Leu Leu Glu Arg Leu Arg Lys Leu Glu Phe Asp Ile Ser
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gaa gat gaa ata ttc aca tct ctg act gca gcc aga agt tta cta gag      414
Glu Asp Glu Ile Phe Thr Ser Leu Thr Ala Ala Arg Ser Leu Leu Glu
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cgg aaa caa gtc aga ccc atg ctg cta gtt gat gat cgg gca cta cct      462
Arg Lys Gln Val Arg Pro Met Leu Leu Val Asp Asp Arg Ala Leu Pro
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Asp Phe Lys Gly Ile Gln Thr Ser Asp Pro Asn Ala Val Val Met Gly
  101                      106                      111                      116

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tta ctc ctg gat gga gca cct ctg ata gca atc cac aaa gcc agg tat      606
Leu Leu Leu Asp Gly Ala Pro Leu Ile Ala Ile His Lys Ala Arg Tyr
  133                      138                      143                      148

tac aag agg aaa gat ggc tta gcc ctg ggg cct gga cca ttt gtg act      654
Tyr Lys Arg Lys Asp Gly Leu Ala Leu Gly Pro Gly Pro Phe Val Thr
  149                      154                      159                      164

gct tta gag tat gcc aca gat acc aaa gcc aca gtc gtg ggg aaa cca      702
Ala Leu Glu Tyr Ala Thr Asp Thr Lys Ala Thr Val Val Gly Lys Pro
  165                      170                      175                      180

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gag aag acg ttc ttt ttg gaa gca ttg cgg ggc act ggc tgt gaa cct	750
Glu Lys Thr Phe Phe Leu Glu Ala Leu Arg Gly Thr Gly Cys Glu Pro	
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gag gag gct gtc atg ata gga gat gat tgc agg gat gat gtt ggt ggg	798
Glu Glu Ala Val Met Ile Gly Asp Asp Cys Arg Asp Asp Val Gly Gly	
197 202 207 212	
gct caa gat gtc ggc atg ctg ggc atc tta gta aag act ggg aaa tat	846
Ala Gln Asp Val Gly Met Leu Gly Ile Leu Val Lys Thr Gly Lys Tyr	
213 218 223 228	
cga gca tca gat gaa gaa aaa att aat cca cct cct tac tta act tgt	894
Arg Ala Ser Asp Glu Glu Lys Ile Asn Pro Pro Tyr Leu Thr Cys	
229 234 239 244	
gag agt ttc cct cat gct gcg gac cac att ctg cag cac cta ttg tga	942
Glu Ser Phe Pro His Ala Ala Asp His Ile Leu Gln His Leu Leu *	
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gatcgtgcag caggggtcgg agcccgctgc cgagggcagg gcagggcagg tcgggggtggg	180
gcggggcggg gatcaagcag gggcagggct ggcgctgcgg cgggagatgc tgcggggccg	240
cggcggcgct tggcagccag gagctctgca ttgaaggcac tggggtaaag tgaatgccga	300
agacagaaga tttggatgat acaccactga ctttctttgt ttggaataca cgtt atg	357
	Met
	1
aac cct ttc tgg agc atg tct aca agc tct gta cgc aaa cga tct gaa	405
Asn Pro Phe Trp Ser Met Ser Thr Ser Ser Val Arg Lys Arg Ser Glu	
2 7 12 17	
ggt gaa gag aag aca tta aca ggg gac gtg aaa acc agt cct cca cga	453
Gly Glu Glu Lys Thr Leu Thr Gly Asp Val Lys Thr Ser Pro Pro Arg	
18 23 28 33	

act gca cca aag aaa cag ctg cct tct att ccc aaa aat gct ttg ccc	501
Thr Ala Pro Lys Lys Gln Leu Pro Ser Ile Pro Lys Asn Ala Leu Pro	
34 39 44 49	
ata act aag cct aca tct cct gcc cca gca gca cag tca aca aat ggc	549
Ile Thr Lys Pro Thr Ser Pro Ala Pro Ala Ala Gln Ser Thr Asn Gly	
50 55 60 65	
acg cat gcg tcc tat gga ccc ttc tac ctg gaa tac tct ctt ctt gca	597
Thr His Ala Ser Tyr Gly Pro Phe Tyr Leu Glu Tyr Ser Leu Leu Ala	
66 71 76 81	
gaa ttt acc ttg gtt gtg aag cag aag cta cca ggc gtc tat gtg cag	645
Glu Phe Thr Leu Val Val Lys Gln Lys Leu Pro Gly Val Tyr Val Gln	
82 87 92 97	
cca tct tat cgc tct gca tta atg tgg ttt gga gta ata ttc ata cgg	693
Pro Ser Tyr Arg Ser Ala Leu Met Trp Phe Gly Val Ile Phe Ile Arg	
98 103 108 113	
cat gga ctt tac caa gat ggc gta ttt aag ttt aca gtt tac atc cct	741
His Gly Leu Tyr Gln Asp Gly Val Phe Lys Phe Thr Val Tyr Ile Pro	
114 119 124 129	
gat aac tat cca gat ggt gac tgt cca cgc ttg gtg ttc gat att cct	789
Asp Asn Tyr Pro Asp Gly Asp Cys Pro Arg Leu Val Phe Asp Ile Pro	
130 135 140 145	
gtc ttt cac ccg cta gtt gat ccc acc tca ggt gag ctg gat gtg aag	837
Val Phe His Pro Leu Val Asp Pro Thr Ser Gly Glu Leu Asp Val Lys	
146 151 156 161	
aga gca ttt gca aaa tgg agg cgg aac cat aat cat att tgg cag gta	885
Arg Ala Phe Ala Lys Trp Arg Arg Asn His Asn His Ile Trp Gln Val	
162 167 172 177	
tta atg tat gca agg aga gtt ttc tac aag att gat aca gca agc ccc	933
Leu Met Tyr Ala Arg Arg Val Phe Tyr Lys Ile Asp Thr Ala Ser Pro	
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ctg aac cca gag gct gca gta ctg tat gaa aaa gat att cag ctt ttt	981
Leu Asn Pro Glu Ala Ala Val Leu Tyr Glu Lys Asp Ile Gln Leu Phe	
194 199 204 209	
aaa agt aaa gtt gtt gac agt gtt aag gtg tgc act gct cgt ttg ttt	1029
Lys Ser Lys Val Val Asp Ser Val Lys Val Cys Thr Ala Arg Leu Phe	
210 215 220 225	
gac caa cct aaa ata gaa gac ccc tat gca att agc ttt tct cca tgg	1077
Asp Gln Pro Lys Ile Glu Asp Pro Tyr Ala Ile Ser Phe Ser Pro Trp	
226 231 236 241	
aat cct tct gta cat gat gaa gcc aga gaa aag atg ctg act cag aaa	1125
Asn Pro Ser Val His Asp Glu Ala Arg Glu Lys Met Leu Thr Gln Lys	
242 247 252 257	

aag aag cct gaa gaa cag cac aat aaa agt gtt cat gtt gct ggc ctg	1173
Lys Lys Pro Glu Glu Gln His Asn Lys Ser Val His Val Ala Gly Leu	
258 263 268 273	
tca tgg gta aag cct ggc tca gta cag cct ttc agt aaa gaa gag aaa	1221
Ser Trp Val Lys Pro Gly Ser Val Gln Pro Phe Ser Lys Glu Glu Lys	
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aca gtg gcg act taa gagatgggtga atctgggtgca ccatgcactt tcctgctaga	1276
Thr Val Ala Thr *	
290	
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acaaaggcta atttataaat gctttattga aaaatacact tatcttcata taaaattaca	2056
gtagcagtat cttgagaagt tttataaata tttttgcaga acactattct aattgaacaa	2116
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Met Ala Ala His Glu Trp Asp Trp Phe Gln Arg Glu Glu
1 5 10

ctc atc ggg cag att agc gac atc cga gtg cag aac ctg caa gtt gag 157
Leu Ile Gly Gln Ile Ser Asp Ile Arg Val Gln Asn Leu Gln Val Glu
14 19 24 29

agg gaa aat gtg cag aag agg acc ttt aca cga tgg ata aat cta cat 205
Arg Glu Asn Val Gln Lys Arg Thr Phe Thr Arg Trp Ile Asn Leu His
30 35 40 45

cta gaa aag tgc aac cca cct cta gaa gtt aaa gat tta ttc gtc gat 253
Leu Glu Lys Cys Asn Pro Pro Leu Glu Val Lys Asp Leu Phe Val Asp
46 51 56 61

ata caa gat ggc aaa atc cta atg gct ttg tta gaa gtc ctg tct ggg 301
Ile Gln Asp Gly Lys Ile Leu Met Ala Leu Leu Glu Val Leu Ser Gly
62 67 72 77

cgg aat ctg ctg cac gaa tac aaa tcc tcg tcg cat cgt att ttt cgg 349
Arg Asn Leu Leu His Glu Tyr Lys Ser Ser Ser His Arg Ile Phe Arg
78 83 88 93

ttg aac aac ata gcg aaa gca ctt aag ttt ttg gaa gat agc aat gta 397
Leu Asn Asn Ile Ala Lys Ala Leu Lys Phe Leu Glu Asp Ser Asn Val
94 99 104 109

aaa ctg gtt agc att gat gca gca gaa ata gca gat ggc aac cct tct 445
Lys Leu Val Ser Ile Asp Ala Ala Glu Ile Ala Asp Gly Asn Pro Ser
110 115 120 125

ttg gtt ctt ggg ctg ata tgg aac ata atc ctc ttc ttc cag att aag 493
Leu Val Leu Gly Leu Ile Trp Asn Ile Ile Leu Phe Phe Gln Ile Lys
126 131 136 141

gag ctc aca ggc aac ctc agc aga aac tct cca tct tcc agc ttg tcc 541
Glu Leu Thr Gly Asn Leu Ser Arg Asn Ser Pro Ser Ser Ser Leu Ser
142 147 152 157

cct ggc tca ggg ggc aca gac tca gac tca tcc ttc cca ccc aca ccc 589
Pro Gly Ser Gly Gly Thr Asp Ser Asp Ser Ser Phe Pro Pro Thr Pro
158 163 168 173

act gca gag agg agc gtg gca ata tcg gtg aaa gac cag agg aag gct 637
Thr Ala Glu Arg Ser Val Ala Ile Ser Val Lys Asp Gln Arg Lys Ala
174 179 184 189

atc aag gcc ctg ttg gcg tgg gtg cag agg aaa acg aga aag tat ggc 685
Ile Lys Ala Leu Leu Ala Trp Val Gln Arg Lys Thr Arg Lys Tyr Gly
190 195 200 205

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ttt gaa ggg agc cca aga gtg gca aag gaa tca ttg agg cag gat gga				1453
Phe Glu Gly Ser Pro Arg Val Ala Lys Glu Ser Leu Arg Gln Asp Gly				
446	451	456	461	
cat gtc ttg gca gtt gag gtt gct gag gaa aag gaa cag aaa cag gaa				1501
His Val Leu Ala Val Glu Val Ala Glu Glu Lys Glu Gln Lys Gln Glu				
462	467	472	477	
tcc tcg aag att cca gaa tcc tcc tct gac aag gtc gct ggt gac att				1549
Ser Ser Lys Ile Pro Glu Ser Ser Ser Asp Lys Val Ala Gly Asp Ile				
478	483	488	493	
ttt ttg gtg gag ggc aca aac aat aat tct cag tct tct tcc tgt aat				1597
Phe Leu Val Glu Gly Thr Asn Asn Asn Ser Gln Ser Ser Ser Cys Asn				
494	499	504	509	
ggg gct tta gag agt aca gcc cgc cac gat gaa gaa agt cac tct ctt				1645
Gly Ala Leu Glu Ser Thr Ala Arg His Asp Glu Glu Ser His Ser Leu				
510	515	520	525	
tta ccc cca gga gaa aat act gtg atg gcc gat tcc ttc cag atc aag				1693
Leu Pro Pro Gly Glu Asn Thr Val Met Ala Asp Ser Phe Gln Ile Lys				
526	531	536	541	
gtt aac ctg atg act gta gaa gct tta gag gag gga gac tat ttt gaa				1741
Val Asn Leu Met Thr Val Glu Ala Leu Glu Glu Gly Asp Tyr Phe Glu				
542	547	552	557	
gcc atc cca tta aaa gcc tca aaa ttt aac agc gac cta ata gat ttt				1789
Ala Ile Pro Leu Lys Ala Ser Lys Phe Asn Ser Asp Leu Ile Asp Phe				
558	563	568	573	
gct tct acc agc cag gct ttc aac aaa gtt cct tca cct cat gag aca				1837
Ala Ser Thr Ser Gln Ala Phe Asn Lys Val Pro Ser Pro His Glu Thr				
574	579	584	589	
aaa cct gac gag gat gct gag gct ttt gag aat cat gct gaa aaa cta				1885
Lys Pro Asp Glu Asp Ala Glu Ala Phe Glu Asn His Ala Glu Lys Leu				
590	595	600	605	
ggg aaa agg agt att aaa tct gct cac aaa aag aag gat tcg cca gag				1933
Gly Lys Arg Ser Ile Lys Ser Ala His Lys Lys Lys Asp Ser Pro Glu				
606	611	616	621	
cct caa gtt aag atg gac aaa cat gaa cct cat cag gac tcc gga gaa				1981
Pro Gln Val Lys Met Asp Lys His Glu Pro His Gln Asp Ser Gly Glu				
622	627	632	637	
gaa gct gaa ggc tgt cct tca gcc cca gaa gag aca cca gtg gat aaa				2029
Glu Ala Glu Gly Cys Pro Ser Ala Pro Glu Glu Thr Pro Val Asp Lys				
638	643	648	653	
aag cca gag gtg cat gaa aag gcc aag aga aag tcc acc cgt cct cat				2077
Lys Pro Glu Val His Glu Lys Ala Lys Arg Lys Ser Thr Arg Pro His				
654	659	664	669	

tat gag gaa gag gga gaa gac gat gac ctc cag ggt gtg ggc gag gaa Tyr Glu Glu Glu Gly Glu Asp Asp Asp Leu Gln Gly Val Gly Glu Glu 670 675 680 685	2125
tta tct tcc agc ccc cca agc agc tgt gtc agc ttg gag acc ctt ggg Leu Ser Ser Ser Pro Pro Ser Ser Cys Val Ser Leu Glu Thr Leu Gly 686 691 696 701	2173
agt cac agc gaa gaa ggc ctg gat ttc aag ccc tcc cca ccc ctc tca Ser His Ser Glu Glu Gly Leu Asp Phe Lys Pro Ser Pro Pro Leu Ser 702 707 712 717	2221
aag gtt tcc gtc att ccc cac gac ctc ttc tat ttc cca cac tat gag Lys Val Ser Val Ile Pro His Asp Leu Phe Tyr Phe Pro His Tyr Glu 718 723 728 733	2269
gtt ccc ctg gct gca gtt ttg gag gct tat gta gaa gac ccg gag gat Val Pro Leu Ala Ala Val Leu Glu Ala Tyr Val Glu Asp Pro Glu Asp 734 739 744 749	2317
cta aaa aat gaa gaa atg gat ctc gaa gag cca gag ggc tat atg cca Leu Lys Asn Glu Glu Met Asp Leu Glu Glu Pro Glu Gly Tyr Met Pro 750 755 760 765	2365
gac ctg gac tcc agg gag gag gag gcc gat ggc tct cag agc agc tcc Asp Leu Asp Ser Arg Glu Glu Glu Ala Asp Gly Ser Gln Ser Ser Ser 766 771 776 781	2413
agt tcc tcg gtg cca gga gag agc ctc ccc agt gcc agc gac cag gtg Ser Ser Ser Val Pro Gly Glu Ser Leu Pro Ser Ala Ser Asp Gln Val 782 787 792 797	2461
ctg tat ctc agc agg ggt ggt gtg ggt acc aca cca gcc tca gaa ccc Leu Tyr Leu Ser Arg Gly Gly Val Gly Thr Thr Pro Ala Ser Glu Pro 798 803 808 813	2509
gct cca ctg gcc ccc cat gag gac cac cag caa agg gag acc aaa gag Ala Pro Leu Ala Pro His Glu Asp His Gln Gln Arg Glu Thr Lys Glu 814 819 824 829	2557
aat gac ccc atg gac agc cat cag tcc cag gaa tcc cca aac ctg gaa Asn Asp Pro Met Asp Ser His Gln Ser Gln Glu Ser Pro Asn Leu Glu 830 835 840 845	2605
aac ata gca aac ccc cta gaa gaa aat gta acg aaa gaa tca atc agt Asn Ile Ala Asn Pro Leu Glu Glu Asn Val Thr Lys Glu Ser Ile Ser 846 851 856 861	2653
agt aaa aaa aag gaa aaa agg aaa cat gtg gac cac gta gaa agt tca Ser Lys Lys Lys Glu Lys Arg Lys His Val Asp His Val Glu Ser Ser 862 867 872 877	2701
cta ttt gta gca cca gga agt gtt caa tcc tca gat gac cta gaa gaa Leu Phe Val Ala Pro Gly Ser Val Gln Ser Ser Asp Asp Leu Glu Glu 878 883 888 893	2749

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Asp Ser Ser Asp Tyr Ser Ile Pro Ser Arg Thr Ser His Ser Asp Ser	
894 899 904 909	
agc att tac ctt cga cga cat act cat agg tct tcg gaa tcg gat cat	2845
Ser Ile Tyr Leu Arg Arg His Thr His Arg Ser Ser Glu Ser Asp His	
910 915 920 925	
ttt agc tat gtt cag ttg agg aac gca gca gat ctg gat gac aga aga	2893
Phe Ser Tyr Val Gln Leu Arg Asn Ala Ala Asp Leu Asp Asp Arg Arg	
926 931 936 941	
aac cga ata tta acc agg aag gcc aac agc tca gga gaa gcc atg tca	2941
Asn Arg Ile Leu Thr Arg Lys Ala Asn Ser Ser Gly Glu Ala Met Ser	
942 947 952 957	
ctg ggg agc cac agc ccg cag agt gac tcc ctg aca cag ctt gtc cag	2989
Leu Gly Ser His Ser Pro Gln Ser Asp Ser Leu Thr Gln Leu Val Gln	
958 963 968 973	
cag ccg gat atg atg tat ttt att ctc ttc ctg tgg ctc ctg gtg tac	3037
Gln Pro Asp Met Met Tyr Phe Ile Leu Phe Leu Trp Leu Leu Val Tyr	
974 979 984 989	
tgc ttg ctg ctc ttc cca caa ctg gat gtt agc agg ctc tga tacgtgt	3086
Cys Leu Leu Leu Phe Pro Gln Leu Asp Val Ser Arg Leu *	
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ttcctgttga ttacaaaag gtgcaggtat gagcaggtct gaagactaac attttgtgaa	360
gttgtaaaac agaaaacctg ttagaa atg tgg tgg ttt cag caa ggc ctc agt	413
Met Trp Trp Phe Gln Gln Gly Leu Ser	

1

5

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Phe Leu Pro Ser Ala Leu Val Ile Trp Thr Ser Ala Ala Phe Ile Phe	
10 15 20 25	
tca tac att act gca gta aca ctc cac cat ata gac ccg gct tta cct	509
Ser Tyr Ile Thr Ala Val Thr Leu His His Ile Asp Pro Ala Leu Pro	
26 31 36 41	
tat atc agt gac act ggt aca gta gct cca gaa aaa tgc tta ttt ggg	557
Tyr Ile Ser Asp Thr Gly Thr Val Ala Pro Glu Lys Cys Leu Phe Gly	
42 47 52 57	
gca atg cta aat att gcg gca gtt tta tgc att gct acc att tat gtt	605
Ala Met Leu Asn Ile Ala Ala Val Leu Cys Ile Ala Thr Ile Tyr Val	
58 63 68 73	
cgt tat aag caa gtt cat gct ctg agt cct gaa gag aac gtt atc atc	653
Arg Tyr Lys Gln Val His Ala Leu Ser Pro Glu Glu Asn Val Ile Ile	
74 79 84 89	
aaa tta aac aag gct ggc ctt gta ctt gga ata ctg agt tgt tta gga	701
Lys Leu Asn Lys Ala Gly Leu Val Leu Gly Ile Leu Ser Cys Leu Gly	
90 95 100 105	
ctt tct att gtg gca aac ttc cag aaa aca acc ctt ttt gct gca cat	749
Leu Ser Ile Val Ala Asn Phe Gln Lys Thr Thr Leu Phe Ala Ala His	
106 111 116 121	
gta agt gga gct gtg ctt acc ttt ggt atg ggc tca tta tat atg ttt	797
Val Ser Gly Ala Val Leu Thr Phe Gly Met Gly Ser Leu Tyr Met Phe	
122 127 132 137	
gtt cag acc atc ctt tcc tac caa atg cag ccc aaa atc cat ggc aaa	845
Val Gln Thr Ile Leu Ser Tyr Gln Met Gln Pro Lys Ile His Gly Lys	
138 143 148 153	
caa gtc ttc tgg atc aga ctg ttg ttg gtt atc tgg tgt gga gta agt	893
Gln Val Phe Trp Ile Arg Leu Leu Leu Val Ile Trp Cys Gly Val Ser	
154 159 164 169	
gca ctt agc atg ctg act tgc tca tca gtt ttg cac agt ggc aat ttt	941
Ala Leu Ser Met Leu Thr Cys Ser Ser Val Leu His Ser Gly Asn Phe	
170 175 180 185	
ggg act gat tta gaa cag aaa ctc cat tgg aac ccc gag gac aaa ggt	989
Gly Thr Asp Leu Glu Gln Lys Leu His Trp Asn Pro Glu Asp Lys Gly	
186 191 196 201	
tat gtg ctt cac atg atc act act gca gca gaa tgg tct atg tca ttt	1037
Tyr Val Leu His Met Ile Thr Thr Ala Ala Glu Trp Ser Met Ser Phe	
202 207 212 217	
tcc ttc ttt ggt ttt ttc ctg act tac att cgt gat ttt cag aaa att	1085
Ser Phe Phe Gly Phe Phe Leu Thr Tyr Ile Arg Asp Phe Gln Lys Ile	
218 223 228 233	

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Phe	Leu	Arg	Met	Pro	Leu	Asp	Lys	His	Met	Glu	Met	Glu	Asn	Ile	Ser		
61					66					71					76		
tca	gaa	gaa	gtt	gtg	gaa	ata	gaa	tac	gtg	gag	aag	tat	act	gca	ccc		471
Ser	Glu	Glu	Val	Val	Glu	Ile	Glu	Tyr	Val	Glu	Lys	Tyr	Thr	Ala	Pro		
77					82					87					92		
cag	cca	gag	caa	tgc	atg	ttc	cat	gat	gac	tgg	atc	agt	tca	att	aaa		519
Gln	Pro	Glu	Gln	Cys	Met	Phe	His	Asp	Asp	Trp	Ile	Ser	Ser	Ile	Lys		
93					98					103					108		
ggg	gca	gag	gaa	tgg	atc	ttg	act	ggg	tct	tat	gat	aag	act	tct	cgg		567
Gly	Ala	Glu	Glu	Trp	Ile	Leu	Thr	Gly	Ser	Tyr	Asp	Lys	Thr	Ser	Arg		
109					114					119					124		
atc	tgg	tcc	ttg	gaa	gga	aag	tca	ata	atg	aca	att	gtg	gga	cat	acg		615
Ile	Trp	Ser	Leu	Glu	Gly	Lys	Ser	Ile	Met	Thr	Ile	Val	Gly	His	Thr		
125					130					135					140		
gat	gtt	gta	aaa	gat	gtg	gcc	tgg	gtg	aaa	aaa	gat	agt	ttg	tcc	tgc		663
Asp	Val	Val	Lys	Asp	Val	Ala	Trp	Val	Lys	Lys	Asp	Ser	Leu	Ser	Cys		
141					146					151					156		
tta	tta	ttg	agt	gct	tct	atg	gat	cag	act	att	ctc	tta	tgg	gag	tgg		711
Leu	Leu	Leu	Ser	Ala	Ser	Met	Asp	Gln	Thr	Ile	Leu	Leu	Trp	Glu	Trp		
157					162					167					172		
aat	gta	gag	aga	aac	aaa	gtg	aaa	gcc	cta	cac	tgc	tgt	aga	ggg	cat		759
Asn	Val	Glu	Arg	Asn	Lys	Val	Lys	Ala	Leu	His	Cys	Cys	Arg	Gly	His		
173					178					183					188		
gct	gga	agt	gta	gat	tct	ata	gct	gtt	gat	ggc	tca	gga	act	aaa	ttt		807
Ala	Gly	Ser	Val	Asp	Ser	Ile	Ala	Val	Asp	Gly	Ser	Gly	Thr	Lys	Phe		
189					194					199					204		
tgc	agt	ggc	tcc	tgg	gat	aag	atg	cta	aag	atc	tgg	tct	aca	gtc	cct		855
Cys	Ser	Gly	Ser	Trp	Asp	Lys	Met	Leu	Lys	Ile	Trp	Ser	Thr	Val	Pro		
205					210					215					220		
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Thr	Asp	Glu	Glu	Asp	Glu	Met	Glu	Glu	Ser	Thr	Asn	Arg	Pro	Arg	Lys		
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Lys	Gln	Lys	Thr	Glu	Gln	Leu	Gly	Leu	Thr	Arg	Thr	Pro	Ile	Val	Thr		
237					242					247					252		
ctc	tct	ggc	cac	atg	gag	gca	gtt	tcc	tca	gtt	ctg	tgg	tca	gat	gct		999
Leu	Ser	Gly	His	Met	Glu	Ala	Val	Ser	Ser	Val	Leu	Trp	Ser	Asp	Ala		
253					258					263					268		
gaa	gaa	atc	tgc	agt	gca	tct	tgg	gac	cat	aca	att	aga	gtg	tgg	gat		1047
Glu	Glu	Ile	Cys	Ser	Ala	Ser	Trp	Asp	His	Thr	Ile	Arg	Val	Trp	Asp		
269					274					279					284		
ggt	gag	tct	ggc	agt	ctt	aag	tca	act	ttg	aca	gga	aat	aaa	gtg	ttt		1095
Val	Glu	Ser	Gly	Ser	Leu	Lys	Ser	Thr	Leu	Thr	Gly	Asn	Lys	Val	Phe		

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Asn Cys Ile Ser Tyr Ser Pro Leu Cys Lys Arg Leu Ala Ser Gly Ser				
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aca gat agg cat atc aga ctg tgg gat ccc cga act aaa gat ggt tct				1191
Thr Asp Arg His Ile Arg Leu Trp Asp Pro Arg Thr Lys Asp Gly Ser				
317	322	327	332	
ttg gtg tcg ctg tcc cta acg tca cat act ggt tgg gtg aca tca gta				1239
Leu Val Ser Leu Ser Leu Thr Ser His Thr Gly Trp Val Thr Ser Val				
333	338	343	348	
aaa tgg tct cct acc cat gaa cag cag ctg att tca gga tct tta gat				1287
Lys Trp Ser Pro Thr His Glu Gln Gln Leu Ile Ser Gly Ser Leu Asp				
349	354	359	364	
aac att gtt aag ctg tgg gat aca aga agt tgt aag gct cct ctc tat				1335
Asn Ile Val Lys Leu Trp Asp Thr Arg Ser Cys Lys Ala Pro Leu Tyr				
365	370	375	380	
gat ctg gct gct cat gaa gac aaa gtt ctg agt gta gac tgg aca gac				1383
Asp Leu Ala Ala His Glu Asp Lys Val Leu Ser Val Asp Trp Thr Asp				
381	386	391	396	
aca ggg cta ctt ctg agt gga gga gca gac aat aaa ttg tat tcc tac				1431
Thr Gly Leu Leu Leu Ser Gly Gly Ala Asp Asn Lys Leu Tyr Ser Tyr				
397	402	407	412	
aga tat tca cct acc act tcc cat gtt ggg gca tga aagt gaacaataat				1481
Arg Tyr Ser Pro Thr Thr Ser His Val Gly Ala *				
413	418	423		
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gcagatgcag aaagcagcct tttgaagttt atataatggt tcccccttc ataacagcta				1601
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ccgcttcaga cttcagaacc agcgtcgtcc tcaaccacct ggccgagaag tggtttcgg	180
gccagcgcga gcggggcccg gcggccggca ggctcgggga gctactgcac caggggcgct	240
accgggaggc cctggccgcc gcctgcgagg cgctgcgagc agaaccacgt gacttgattg	300
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aagtactctg cgatgctggg tttttagggt atgccttaca actctttctt cagtgccttag	480
cccttgatga agattttgca cctgcaaagc tgcaagtaca aaagatttta tgtgatttat	540
tattacctga aaacttaaaa gaaggcctga aggaatcttc ctggagttca ttaccatgta	600
ctaaaaacag accttttgat tttcattcag tg atg gaa gag tct cag tct ctc	653
Met Glu Glu Ser Gln Ser Leu	
1 5	
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Asn Glu Pro Ser Pro Lys Gln Ser Glu Glu Ile Pro Glu Val Thr Ser	
8 13 18 23	
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Glu Pro Val Lys Gly Ser Leu Asn Arg Ala Gln Ser Ala Gln Ser Ile	
24 29 34 39	
aat tca aca gaa atg cct gcc aga gag gac tgt tta aaa aga gtg tcc	797
Asn Ser Thr Glu Met Pro Ala Arg Glu Asp Cys Leu Lys Arg Val Ser	
40 45 50 55	
tca gaa cct gtt ctg tca gtt caa gaa aaa ggt gtt ctg ctg aaa aga	845
Ser Glu Pro Val Leu Ser Val Gln Glu Lys Gly Val Leu Leu Lys Arg	
56 61 66 71	
aag ttg tct ctt tta gaa cag gat gtg att gta aat gaa gat gga aga	893
Lys Leu Ser Leu Leu Glu Gln Asp Val Ile Val Asn Glu Asp Gly Arg	
72 77 82 87	
aat aag ctg aaa aaa caa gga gaa act ccc aat gaa gtc tgt atg ttt	941
Asn Lys Leu Lys Lys Gln Gly Glu Thr Pro Asn Glu Val Cys Met Phe	
88 93 98 103	
tcc tta gct tat ggt gat att cca gaa gaa tta atc gat gtc tca gat	989
Ser Leu Ala Tyr Gly Asp Ile Pro Glu Glu Leu Ile Asp Val Ser Asp	
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Phe Glu Cys Ser Leu Cys Met Arg Leu Phe Phe Glu Pro Val Thr Thr	/
120 125 130 135	
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Pro Cys Gly His Ser Phe Cys Lys Asn Cys Leu Glu Arg Cys Leu Asp	
136 141 146 151	
cat gca cca tat tgt cct ctt tgc aaa gaa agc tta aaa gag tat cta	1133
His Ala Pro Tyr Cys Pro Leu Cys Lys Glu Ser Leu Lys Glu Tyr Leu	
152 157 162 167	
gca gat agg agg tac tgt gtc aca cag ctg ttg gaa gaa tta ata gtg	1181
Ala Asp Arg Arg Tyr Cys Val Thr Gln Leu Leu Glu Glu Leu Ile Val	
168 173 178 183	
aag tat ctg cct gat gaa ctg tct gag aga aaa aaa ata tat gat gaa	1229
Lys Tyr Leu Pro Asp Glu Leu Ser Glu Arg Lys Lys Ile Tyr Asp Glu	
184 189 194 199	
gaa act gct gaa ctc tca cac ttg acc aag aat gtt cca ata ttt gtt	1277
Glu Thr Ala Glu Leu Ser His Leu Thr Lys Asn Val Pro Ile Phe Val	
200 205 210 215	
tgc act atg gcc tac ccc act gtg cct tgc cct ctc cat gta ttt gag	1325
Cys Thr Met Ala Tyr Pro Thr Val Pro Cys Pro Leu His Val Phe Glu	
216 221 226 231	
cca aga tac aga ttg atg att cga aga agt ata cag act gga acc aaa	1373
Pro Arg Tyr Arg Leu Met Ile Arg Arg Ser Ile Gln Thr Gly Thr Lys	
232 237 242 247	
cag ttt ggc atg tgt gtc agt gat aca caa aat agt ttt gca gat tat	1421
Gln Phe Gly Met Cys Val Ser Asp Thr Gln Asn Ser Phe Ala Asp Tyr	
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Gly Cys Met Leu Gln Ile Arg Asn Val His Phe Leu Pro Asp Gly Arg	
264 269 274 279	
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Ser Val Val Asp Thr Val Gly Gly Lys Arg Phe Arg Val Leu Lys Arg	
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Gly Met Lys Asp Gly Tyr Cys Thr Ala Asp Ile Glu Tyr Leu Glu Asp	
296 301 306 311	
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Val Lys Val Glu Asn Glu Asp Glu Ile Lys Asn Leu Arg Glu Leu His	
312 317 322 327	
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Asp Leu Val Tyr Ser Gln Ala Cys Ser Trp Phe Gln Asn Leu Arg Asp	
328 333 338 343	
aga ttt cga agc caa att ctt cag cat ttc gga tca atg ccc gag agg	1709
Arg Phe Arg Ser Gln Ile Leu Gln His Phe Gly Ser Met Pro Glu Arg	
344 349 354 359	
gag gaa aac ctt cag gca gcc cct aat gga cct gca tgg tgt tgg tgg	1757
Glu Glu Asn Leu Gln Ala Ala Pro Asn Gly Pro Ala Trp Cys Trp Trp	

360	365	370	375	
ctt ctt gca gtt ctc	cct gta gac cca cga	tac cag ctg tcg gtt ttg		1805
Leu Leu Ala Val Leu	Pro Val Asp Pro Arg	Tyr Gln Leu Ser Val Leu		
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tca atg aag tct ttg	aaa gaa cgg ttg acc	aag ata cag cat ata ctg		1853
Ser Met Lys Ser Leu	Lys Glu Arg Leu Thr	Lys Ile Gln His Ile Leu		
392	397	402	407	
acc tat ttt tct aga	gac caa tct aag taa c	taactctttg gatctccctt		1904
Thr Tyr Phe Ser Arg	Asp Gln Ser Lys *			
408	413			
taaagtgacc ctaatctggc	tgcattgatg gccagattgt	ctgctgcctt tgcacatcta		1964
gtgctgggttt cagaaattta	atgaaacttt tctttttcct	tcgacctcct gaatcatgtg		2024
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aactttcttt tatgtaagta	atttgtaaaa gtttcttaaa	atttttgctt ttgcttattt		3044
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 Met Ala Ser Gly Cys Lys Ile Gly Pro Ser Ile Leu Asn Ser Asp Leu
 1 5 10 15

gcc aat tta ggg gcc gag tgc ctc cgg atg cta gac tct ggg gcc gat 156
 Ala Asn Leu Gly Ala Glu Cys Leu Arg Met Leu Asp Ser Gly Ala Asp
 17 22 27 32

tat ctg cac ctg gac gta atg gac ggg cat ttt gtt ccc aac atc acc 204
 Tyr Leu His Leu Asp Val Met Asp Gly His Phe Val Pro Asn Ile Thr
 33 38 43 48

ttt ggt cac cct gtg gta gaa agc ctt cga aag cag cta ggc cag gac 252
 Phe Gly His Pro Val Val Glu Ser Leu Arg Lys Gln Leu Gly Gln Asp
 49 54 59 64

cct ttc ttt gac atg cac atg atg gtg tcc aag cca gaa cag tgg gta 300
 Pro Phe Phe Asp Met His Met Met Val Ser Lys Pro Glu Gln Trp Val
 65 70 75 80

aag cca atg gct gta gca gga gcc aat cag tac acc ttt cat ctc gag 348
 Lys Pro Met Ala Val Ala Gly Ala Asn Gln Tyr Thr Phe His Leu Glu
 81 86 91 96

gct act gag aac cca ggg gct ttg att aaa gac att cgg gag aat ggg 396
 Ala Thr Glu Asn Pro Gly Ala Leu Ile Lys Asp Ile Arg Glu Asn Gly
 97 102 107 112

atg aag gtt ggc ctt gcc atc aaa cca gga acc tca gtt gag tat ttg 444
 Met Lys Val Gly Leu Ala Ile Lys Pro Gly Thr Ser Val Glu Tyr Leu
 113 118 123 128

gca cca tgg gct aat cag ata gat atg gcc ttg gtt atg aca gtg gaa 492
 Ala Pro Trp Ala Asn Gln Ile Asp Met Ala Leu Val Met Thr Val Glu
 129 134 139 144

ccg ggg ttt gga ggg cag aaa ttc atg gaa gat atg atg cca aag gtt 540
 Pro Gly Phe Gly Gly Gln Lys Phe Met Glu Asp Met Met Pro Lys Val
 145 150 155 160

cac tgg ttg agg acc cag ttc cca tct ttg gat ata gag gtc gat ggt 588
 His Trp Leu Arg Thr Gln Phe Pro Ser Leu Asp Ile Glu Val Asp Gly
 161 166 171 176

gga gta ggt cct gac act gtc cat aaa tgt gca gag gca gga gct aac 636

Gly Val Gly Pro Asp Thr Val His Lys Cys Ala Glu Ala Gly Ala Asn	
177 182 187 192	
atg att gtg tct ggc agt gct att atg agg agt gaa gac ccc aga tct	684
Met Ile Val Ser Gly Ser Ala Ile Met Arg Ser Glu Asp Pro Arg Ser	
193 198 203 208	
gtg atc aat cta tta aga aat gtt tgc tca gaa gct gct cag aaa cgt	732
Val Ile Asn Leu Leu Arg Asn Val Cys Ser Glu Ala Ala Gln Lys Arg	
209 214 219 224	
tct ctt gat cgg tga aaccataagg agcccagtgt tcctgttcat gaaatctccc	787
Ser Leu Asp Arg *	
225	
ttttactgga aaacaggaat attgactacc aaatcacaat gcaattgaag ccgtactgct	847
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Met Ala Ser Gly Cys Lys Ile Gly Pro Ser Ile Leu Asn Ser Asp Leu	
1 5 10 15	
gcc aat tta ggg gcc gag tgc ctc cgg atg cta gac tct ggg gcc gat	156
Ala Asn Leu Gly Ala Glu Cys Leu Arg Met Leu Asp Ser Gly Ala Asp	
17 22 27 32	
tat ctg cac ctg gac gta atg gac ggg cat ttt gtt ccc aac atc acc	204
Tyr Leu His Leu Asp Val Met Asp Gly His Phe Val Pro Asn Ile Thr	
33 38 43 48	
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Phe Gly His Pro Val Val Glu Ser Leu Arg Lys Gln Leu Gly Gln Asp	
49 54 59 64	
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Pro Phe Phe Asp Met His Met Met Val Ser Lys Pro Glu Gln Trp Val	
65 70 75 80	
aag cca atg gct gta gca gga gcc aat cag tac acc ttt cat ctc gag	348
Lys Pro Met Ala Val Ala Gly Ala Asn Gln Tyr Thr Phe His Leu Glu	
81 86 91 96	

gct act gag aac cca ggg gct ttg att aaa gac att cgg gag aat ggg	396
Ala Thr Glu Asn Pro Gly Ala Leu Ile Lys Asp Ile Arg Glu Asn Gly	
97 102 107 112	
atg aag tct tgc tct gtc acc cag gct gaa gtg cag tgg cac agt cag	444
Met Lys Ser Cys Ser Val Thr Gln Ala Glu Val Gln Trp His Ser Gln	
113 118 123 128	
ggc cca ttg cag gtt ggc ctt gcc atc aaa cca gga acc tca gtt gag	492
Gly Pro Leu Gln Val Gly Leu Ala Ile Lys Pro Gly Thr Ser Val Glu	
129 134 139 144	
tat ttg gca cca tgg gct aat cag ata gat atg gcc ttg gtt atg aca	540
Tyr Leu Ala Pro Trp Ala Asn Gln Ile Asp Met Ala Leu Val Met Thr	
145 150 155 160	
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Val Glu Pro Gly Phe Gly Gly Gln Lys Phe Met Glu Asp Met Met Pro	
161 166 171 176	
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Lys Val His Trp Leu Arg Thr Gln Phe Pro Ser Leu Asp Ile Glu Val	
177 182 187 192	
gat ggt gga gta ggt cct gac act gtc cat aaa tgt gca gag gca gga	684
Asp Gly Gly Val Gly Pro Asp Thr Val His Lys Cys Ala Glu Ala Gly	
193 198 203 208	
gct aac atg att gtg tct ggc agt gct att atg agg agt gaa gac ccc	732
Ala Asn Met Ile Val Ser Gly Ser Ala Ile Met Arg Ser Glu Asp Pro	
209 214 219 224	
aga tct gtg atc aat cta tta aga aat gtt tgc tca gaa gct gct cag	780
Arg Ser Val Ile Asn Leu Leu Arg Asn Val Cys Ser Glu Ala Ala Gln	
225 230 235 240	
aaa cgt tct ctt gat cgg tga aa ccataaggag cccagtgttc ctgttcatga	833
Lys Arg Ser Leu Asp Arg *	
241 246	
aatctccctt ttactggaaa acaggaatat tgactaccaa atcacaatgc aattgaagcc	893
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                                     Met Ile Ser
                                     1

aga tac act cgg aag gcg gtg cca cag agc ttg gag ctg aaa gga ata      164
Arg Tyr Thr Arg Lys Ala Val Pro Gln Ser Leu Glu Leu Lys Gly Ile
  4                               9                               14                               19

aca aaa cat gct ctt aac cat cat ccc cct cca gag4 aag ctg gag gaa      212
Thr Lys His Ala Leu Asn His His Pro Pro Glu Lys Leu Glu Glu
  20                               25                               30                               35

att tcc ccc acc agt gac agt cat gag aaa gac aca agt tcc caa agc      260
Ile Ser Pro Thr Ser Asp Ser His Glu Lys Asp Thr Ser Ser Gln Ser
  36                               41                               46                               51

aag tct gac atc aca aga gaa tca tct ttt aca tca gcc gac act ggg      308
Lys Ser Asp Ile Thr Arg Glu Ser Ser Phe Thr Ser Ala Asp Thr Gly
  52                               57                               62                               67

aat tca ctg tct gct ttt cca agt tat aca ggc gca ggg ata tct act      356
Asn Ser Leu Ser Ala Phe Pro Ser Tyr Thr Gly Ala Gly Ile Ser Thr
  68                               73                               78                               83

gaa gga agc tcg gac ttc tcc tgg gga tat ggt gaa ctc gat caa aat      404
Glu Gly Ser Ser Asp Phe Ser Trp Gly Tyr Gly Glu Leu Asp Gln Asn
  84                               89                               94                               99

gcc act gaa aaa gtc cag aca atg ttc aca gcc att gat gaa ctc ttg      452
Ala Thr Glu Lys Val Gln Thr Met Phe Thr Ala Ile Asp Glu Leu Leu
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tat gag cag aag ttg agt gtg cat acc aag agt cta caa gaa gag tgc      500
Tyr Glu Gln Lys Leu Ser Val His Thr Lys Ser Leu Gln Glu Glu Cys
  116                               121                               126                               131

caa cag tgg aca gct agc ttt cct cac ctc agg att cta ggt agg cag      548
Gln Gln Trp Thr Ala Ser Phe Pro His Leu Arg Ile Leu Gly Arg Gln
  132                               137                               142                               147

ata atc act cca agt gaa ggt tat aga ttg tat cct aga tcc cct tct      596
Ile Ile Thr Pro Ser Glu Gly Tyr Arg Leu Tyr Pro Arg Ser Pro Ser
  148                               153                               158                               163

gct gtt tcc gct tca tat gaa aca acc ttg tct caa gaa aga gat tct      644
Ala Val Ser Ala Ser Tyr Glu Thr Thr Leu Ser Gln Glu Arg Asp Ser
  164                               169                               174                               179

act ata1 ttt ggt ata agg gga aag aag tta cat ttt tca tct tct tat      692
Thr Ile1 Phe Gly Ile Arg Gly Lys Lys Leu His Phe Ser Ser Ser Tyr
  180                               185                               190                               195
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gct cat aaa gca tct tcc att gcc aaa tcc tcc agc ttt tgt tct atg	740
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196 201 206 211	
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Glu Arg Asp Glu Glu Asp Ser Ile Ile Val Ser Glu Gly Ile Ile Glu	
212 217 222 227	
gaa tac cta gca ttc gat cac ata gat ata gaa gag gga ttt cat ggg	836
Glu Tyr Leu Ala Phe Asp His Ile Asp Ile Glu Glu Gly Phe His Gly	
228 233 238 243	
aag aaa tca gaa gca gct aca gag aaa cag aaa tta ggg tat cct ccc	884
Lys Lys Ser Glu Ala Ala Thr Glu Lys Gln Lys Leu Gly Tyr Pro Pro	
244 249 254 259	
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Ile Ala Pro Phe Tyr Cys Met Lys Glu Asp Val Leu Ala Tyr Val Phe	
260 265 270 275	
gac agt gta tgg tgc aag gtt gtg agc tgt atg gag cag ttg aca cgt	980
Asp Ser Val Trp Cys Lys Val Val Ser Cys Met Glu Gln Leu Thr Arg	
276 281 286 291	
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Ser His Trp Glu Gly Phe Ala Ser Asp Asp Glu Ser Asn Val Ala Val	
292 297 302 307	
acc aga ccc gat tca gaa agt tcc tgt gtg ctg agt gaa cta cat cct	1076
Thr Arg Pro Asp Ser Glu Ser Ser Cys Val Leu Ser Glu Leu His Pro	
308 313 318 323	
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Leu Val Leu Pro Arg Val Pro Gln Ser Lys Val Leu Tyr Ile Thr Ser	
324 329 334 339	
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Asn Pro Met Ser Leu Cys Gln Ala Ser Arg His Gln Pro Asn Val Asn	
340 345 350 355	
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Asp Leu Leu Val His Gly Met Pro Leu Gln Pro Arg Asn Leu Ser Leu	
356 361 366 371	
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Met Asp Lys Leu Leu Asp Leu Asp Asp Lys Leu Leu Met Arg Pro Gly	
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Ser Ser Thr Ile Leu Ser Thr Arg Asn Trp Pro Asn Arg Ala Val Glu	
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Phe Ser Thr Ser Ser Leu Ser Tyr Thr Val Gln Ser Thr Arg Arg Arg	
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Ala Ser Ala Arg Thr Pro Ala Gly Lys Arg Val Ile Asn Gln Glu Glu
  5                      10                      15          20

ttg cgg cgg tta atg aag gag aag cag cgt ctg agc acc agt cgg aaa 150
Leu Arg Arg Leu Met Lys Glu Lys Gln Arg Leu Ser Thr Ser Arg Lys
 21                      26                      31          36

cgg ata gaa tct cca ttc gcg aag tac aac cgt ttg ggg cag ctg agt 198
Arg Ile Glu Ser Pro Phe Ala Lys Tyr Asn Arg Leu Gly Gln Leu Ser
 37                      42                      47          52

tgt gcc ctg tgt aac act ccg gtt aag agc gag ctc ctg tgg cag act 246
Cys Ala Leu Cys Asn Thr Pro Val Lys Ser Glu Leu Leu Trp Gln Thr
 53                      58                      63          68

cac gtc ctg gga aag cag cac cga gag aaa gtg gcc gag ctg aaa ggc 294
His Val Leu Gly Lys Gln His Arg Glu Lys Val Ala Glu Leu Lys Gly
 69                      74                      79          84

gcg aag gaa gcc agc cag ggt tcg tcc gcc agt tca gcg cct cag tcc 342
Ala Lys Glu Ala Ser Gln Gly Ser Ser Ala Ser Ser Ala Pro Gln Ser
 85                      90                      95          100

gtc aag agg aaa gcg ccg gac gca gac gac caa gat gtc aag aga gcg 390
Val Lys Arg Lys Ala Pro Asp Ala Asp Asp Gln Asp Val Lys Arg Ala
101                      106                      111          116

aag gcc acc ttg gtg cct cag gta cag ccc tcc aca tct gcg tgg acc 438
Lys Ala Thr Leu Val Pro Gln Val Gln Pro Ser Thr Ser Ala Trp Thr
117                      122                      127          132

acc aac ttt gac aaa ata gga aag gag ttc att aga gcg act ccc agt 486
Thr Asn Phe Asp Lys Ile Gly Lys Glu Phe Ile Arg Ala Thr Pro Ser
133                      138                      143          148

aag cct tca gga ctc agt tta ctc ccc gat tat gaa gat gag gag gag 534
Lys Pro Ser Gly Leu Ser Leu Leu Pro Asp Tyr Glu Asp Glu Glu Glu
149                      154                      159          164

gag gaa gag gag gag gaa gga gat gga gaa aga aaa agg ggg gac gcc 582
Glu Glu Glu Glu Glu Glu Gly Asp Gly Glu Arg Lys Arg Gly Asp Ala
165                      170                      175          180

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Ser Lys Pro Leu Ser Asp Ala Gln Gly Lys Glu His Ser Val Ser Ser
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Ser Arg Glu Val Thr Ser Ser Val Leu Pro Asn Asp Phe Phe Ser Thr				
197	202	207	212	
aat cct ccc aag gcc ccc ata att cct cat tca ggg tca att gag aaa				726
Asn Pro Pro Lys Ala Pro Ile Ile Pro His Ser Gly Ser Ile Glu Lys				
213	218	223	228	
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Ala Glu Ile His Glu Lys Val Val Glu Arg Arg Glu Asn Thr Ala Glu				
229	234	239	244	
gcg tta ccg gaa ggt ttt ttt gac gac cct gag gta gat gca aga gta				822
Ala Leu Pro Glu Gly Phe Phe Asp Asp Pro Glu Val Asp Ala Arg Val				
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cga aag gtt gat gct cca aaa gat cag atg gac aaa gag tgg gac gaa				870
Arg Lys Val Asp Ala Pro Lys Asp Gln Met Asp Lys Glu Trp Asp Glu				
261	266	271	276	
ttc caa aaa gcc atg agg cag gtc aac act att tcc gaa gcc ata gtt				918
Phe Gln Lys Ala Met Arg Gln Val Asn Thr Ile Ser Glu Ala Ile Val				
277	282	287	292	
gcc gaa gag gat gag gag gga cgg ttg gac cgc cag att ggg gag atc				966
Ala Glu Glu Asp Glu Glu Gly Arg Leu Asp Arg Gln Ile Gly Glu Ile				
293	298	303	308	
gat gag cag ata gag tgt tac cga cgg gtg gaa aag cta cgg aat cgc				1014
Asp Glu Gln Ile Glu Cys Tyr Arg Arg Val Glu Lys Leu Arg Asn Arg				
309	314	319	324	
cag gat gaa ata aaa aat aaa ctt aaa gaa atc ctg acc ata aaa gaa				1062
Gln Asp Glu Ile Lys Asn Lys Leu Lys Glu Ile Leu Thr Ile Lys Glu				
325	330	335	340	
ctg cag aaa aag gaa gaa gag aat gct gac agc gat gat gag ggg gaa				1110
Leu Gln Lys Lys Glu Glu Glu Asn Ala Asp Ser Asp Asp Glu Gly Glu				
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Leu Gln Asp Leu Leu Ser Gln Asp Trp Arg Val Lys Gly Ala Leu Leu				
357	362	367	372	
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Met Lys Met Val Ala Pro Trp Thr Arg Phe Tyr
1 5
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Ser Asn Ser Cys Cys Leu Cys Cys His Val Arg Thr Gly Thr Ile Leu
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Leu Gly Val Trp Tyr Leu Ile Ile Asn Ala Val Val Leu Leu Ile Leu
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Leu Ser Ala Leu Ala Asp Pro Asp Gln Tyr Asn Phe Ser Ser Ser Glu
44 49 54 59
ctg gga ggt gac ttt gag ttc atg gat gat gcc aac atg tgc att gcc 481
Leu Gly Gly Asp Phe Glu Phe Met Asp Asp Ala Asn Met Cys Ile Ala
60 65 70 75
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Ile Ala Ile Ser Leu Leu Met Ile Leu Ile Cys Ala Met Ala Thr Tyr
76 81 86 91
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Gly Ala Tyr Lys Gln Arg Ala Ala Trp Ile Ile Pro Phe Phe Cys Tyr
92 97 102 107
cag atc ttt gac ttt gcc ctg aac /atg ttg gtt gca atc act gtg ctt 625
Gln Ile Phe Asp Phe Ala Leu Asn Met Leu Val Ala Ile Thr Val Leu
108 113 118 123

att tat cca aac tcc att cag gaa tac ata cgg caa ctg cct cct aat	673
Ile Tyr Pro Asn Ser Ile Gln Glu Tyr Ile Arg Gln Leu Pro Pro Asn	
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Phe Pro Tyr Arg Asp Asp Val Met Ser Val Asn Pro Thr Cys Leu Val	
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Leu Ile Ile Leu Leu Phe Ile Ser Ile Ile Leu Thr Phe Lys Gly Tyr	
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Leu Pro Pro Tyr Asp Asp Ala Thr Val Asn Gly Ala Ala Lys Glu Pro	
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                        Met Lys Gly Met Lys Val Glu Val Leu Asn
                          1                5

agt gat gct gtg ctc ccc agc cgg gtg tac tgg atc gcc tct gtc atc 340
Ser Asp Ala Val Leu Pro Ser Arg Val Tyr Trp Ile Ala Ser Val Ile
 11                16                21                26

cag aca gca ggg tat cgg gtg ctg ctt cgg tat gaa ggc ttt gaa aat 388
Gln Thr Ala Gly Tyr Arg Val Leu Leu Arg Tyr Glu Gly Phe Glu Asn
 27                32                37                42

gac gcc agc cat gac ttc tgg tgc aac ctg gga aca gtg gat gtc cac 436
Asp Ala Ser His Asp Phe Trp Cys Asn Leu Gly Thr Val Asp Val His
 43                48                53                58

ccc att ggc tgg tgt gcc atc aac agc aag atc cta gtg ccc cca cgg 484
Pro Ile Gly Trp Cys Ala Ile Asn Ser Lys Ile Leu Val Pro Pro Arg

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Leu Val Gly Ser Arg Thr Leu Pro Val Asp Phe His Ile Lys Met Val				
91	96	101	106	
gag agc atg aag tac ccc ttt agg cag ggc atg cgg ctg gaa gtg gtg				628
Glu Ser Met Lys Tyr Pro Phe Arg Gln Gly Met Arg Leu Glu Val Val				
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Asp Lys Ser Gln Val Ser Arg Thr Arg Met Ala Val Val Asp Thr Val				
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Ile Gly Gly Arg Leu Arg Leu Leu Tyr Glu Asp Gly Asp Ser Asp Asp				
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Asp Phe Trp Cys His Met Trp Ser Pro Leu Ile His Pro Val Gly Trp				
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Met Ala His His Pro Thr Phe Arg Lys Ile Tyr Cys Asp Ala Val Pro				
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Glu Glu Gly Met Lys Leu Glu Ala Ile Asp Pro Leu Asn Leu Gly Asn				
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Ile Cys Val Ala Thr Val Cys Lys Val Leu Leu Asp Gly Tyr Leu Met				
235	240	245	250	
atc tgt gtg gac ggg ggg ccc tcc aca gat ggc ttg gac tgg ttc tgc				1060
Ile Cys Val Asp Gly Gly Pro Ser Thr Asp Gly Leu Asp Trp Phe Cys				
251	256	261	266	
tac cat gcc tct tcc cac gcc atc ttc ccg gcc acc ttc tgt cag aag				1108
Tyr His Ala Ser Ser His Ala Ile Phe Pro Ala Thr Phe Cys Gln Lys				
267	272	277	282	
aat gac att gag ctc aca ccg cca aaa ggt tat gag gca cag act ttc				1156
Asn Asp Ile Glu Leu Thr Pro Pro Lys Gly Tyr Glu Ala Gln Thr Phe				
283	288	293	298	

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Arg Leu Phe Asn Met Asp Cys Pro Asn His Gly Phe Lys Val Gly Met	
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Lys Leu Glu Ala Val Asp Leu Met Glu Pro Arg Leu Ile Cys Val Ala	
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Thr Val Lys Arg Val Val His Arg Leu Leu Ser Ile His Phe Asp Gly	
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Trp Asp Ser Glu Tyr Asp Gln Trp Val Asp Cys Glu Ser Pro Asp Ile	
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Tyr Pro Val Gly Trp Cys Glu Leu Thr Gly Tyr Gln Leu Gln Pro Pro	
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Val Ala Ala Glu Pro Ala Thr Pro Leu Lys Ala Lys Glu Ala Thr Lys	
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Lys Thr Arg Pro Leu Arg Gln Gly Ser Lys Lys Pro Leu Leu Glu Asp	
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Lys Lys His Lys Asn Pro Pro Tyr Lys Phe Ile His Met Leu Lys Gly	
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gctctccctg ctgggtgataa tgggagatac agacagtaaa acggacagct cattcataat	540
ggactcggac cctcgacgct gcatgaggca ccactatgtg gattctatca gtcacccatt	600
gtacaagtgt agctcaaaga tgggtgctcct ggccagggtgc gagggggcact gcagccaggc	660
gtcacgctcc gagccttttg tgtcgttcag cactgtcctc aagcaaccct tccgttcctc	720
ctgtcactgc tgccggcccc agacttccaa gctgaaggca ctgcggctgc gatgctcagg	780
gggcatgcga ctactgccca cctaccggta catcctctcc tgtcactgcg aggaatgcaa	840
ttcctgaggc ccgctgctgt gtgtggcttc tggatgggac aactgtagag gcagttcgac	900
cagccaggga aagactggca agaaaagagt taaggcaaaa aagg atg caa caa ttc	956
Met Gln Gln Phe	
1	
tcc cgg gac tct gca tat tct agt aat aaa gac tct aca tgc ttg ttg	1004
Ser Arg Asp Ser Ala Tyr Ser Ser Asn Lys Asp Ser Thr Cys Leu Leu	
5 10 15 20	
aca gag aga gat act ctg gga act tct ttg cag ttc cca tct cct ttc	1052
Thr Glu Arg Asp Thr Leu Gly Thr Ser Leu Gln Phe Pro Ser Pro Phe	
21 26 31 36	
tct ggt aca att tct ttt ggt tca ttt tca gat tca ggc att ttc ccc	1100
Ser Gly Thr Ile Ser Phe Gly Ser Phe Ser Asp Ser Gly Ile Phe Pro	
37 42 47 52	
ctt ggc tct caa tgc tgt ttg ggt ttc caa caa ttc agc att agt ggg	1148
Leu Gly Ser Gln Cys Cys Leu Gly Phe Gln Gln Phe Ser Ile Ser Gly	
53 58 63 68	
aaa aag tgg gcc ctc ata cac aag cgt gtc agg ctg tca gtg ttt ggt	1196
Lys Lys Trp Ala Leu Ile His Lys Arg Val Arg Leu Ser Val Phe Gly	
69 74 79 84	
gca cgc tgg gga aga att tac ttt gga aag tag aaaagccc agcttttcct	1247
Ala Arg Trp Gly Arg Ile Tyr Phe Gly Lys *	
85 90 95	

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gggacatctt ctgttattgt tgatgttttt ttttaccttg tcattttggt ctaagggtgc 1307
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atatccactt gtccatgtga aacatgttgc caaaatggtg gcctggcttg tcttctgaac 1787
gtttggttca aatgtgtttt ggtcctggag gctcaaattt tgagttattc ccacgttttg 1847
aaataaaaag agtatattca aaaaaaaaaa a 1878

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<210> 626
<211> 1310
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (95) .. (955)

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ttgtggcccc cgcggtgcgg agtatggggc gctg      atg gcc atg gag ggc tac 112
                                   Met Ala Met Glu Gly Tyr
                                   1

tgg cgc ttc ctg gcg ctg ctg ggg tcg gca ctg ctc gtc ggc ttc ctg 160
Trp Arg Phe Leu Ala Leu Leu Gly Ser Ala Leu Leu Val Gly Phe Leu
  7              12              17              22

tcg gtg atc ttc gcc ctc gtc tgg gtc ctc cac tac cga gag ggg ctt 208
Ser Val Ile Phe Ala Leu Val Trp Val Leu His Tyr Arg Glu Gly Leu
  23              28              33              38

ggc tgg gat ggg agc gca cta gag ttt aac tgg cac cca gtg ctc atg 256
Gly Trp Asp Gly Ser Ala Leu Glu Phe Asn Trp His Pro Val Leu Met
  39              44              49              54

gtc acc ggc ttc gtc ttc atc cag ggc atc gcc 1 atc atc gtc tac aga 304
Val Thr Gly Phe Val Phe Ile Gln Gly Ile Ala Ile Ile Val Tyr Arg
  55              60              65              70

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ctg ccg tgg acc tgg aaa tgc agc aag ctc ctg atg aaa tcc atc cat	352
Leu Pro Trp Thr Trp Lys Cys Ser Lys Leu Leu Met Lys Ser Ile His	
71 76 81 86	
gca ggg tta aat gca gtt gct gcc att ctt gca att atc tct gtg gtg	400
Ala Gly Leu Asn Ala Val Ala Ala Ile Leu Ala Ile Ile Ser Val Val	
87 92 97 102	
gcc gtg ttt gag aac cac aat gtt aac aat ata gcc aat atg tac agt	448
Ala Val Phe Glu Asn His Asn Val Asn Asn Ile Ala Asn Met Tyr Ser	
103 108 113 118	
ctg cac agc tgg gtt gga ctg ata gct gtc ata tgc tat ttg tta cag	496
Leu His Ser Trp Val Gly Leu Ile Ala Val Ile Cys Tyr Leu Leu Gln	
119 124 129 134	
ctt ctt tca ggt ttt tca gtc ttt ctg ctt cca tgg gct ccg ctt tct	544
Leu Leu Ser Gly Phe Ser Val Phe Leu Leu Pro Trp Ala Pro Leu Ser	
135 140 145 150	
ctc cga gca ttt ctc atg ccc ata cat gtt tat tct gga att gtc atc	592
Leu Arg Ala Phe Leu Met Pro Ile His Val Tyr Ser Gly Ile Val Ile	
151 156 161 166	
ttt gga aca gtg att gca aca gca ctt atg gga ttg aca gag aaa ctg	640
Phe Gly Thr Val Ile Ala Thr Ala Leu Met Gly Leu Thr Glu Lys Leu	
167 172 177 182	
att ttt tcc ctg aga gat cct gca tac agt aca ttc ccg cca gaa ggt	688
Ile Phe Ser Leu Arg Asp Pro Ala Tyr Ser Thr Phe Pro Pro Glu Gly	
183 188 193 198	
gtt ttc gta aat acg ctt ggc ctt ctg atc ctg gtg ttc ggg gcc ctc	736
Val Phe Val Asn Thr Leu Gly Leu Leu Ile Leu Val Phe Gly Ala Leu	
199 204 209 214	
att ttt tgg ata gtc acc aga ccg caa tgg aaa cgt cct aag gag cca	784
Ile Phe Trp Ile Val Thr Arg Pro Gln Trp Lys Arg Pro Lys Glu Pro	
215 220 225 230	
aat tct acc att ctt cat cca aat gga ggc act gaa cag gga gca aga	832
Asn Ser Thr Ile Leu His Pro Asn Gly Gly Thr Glu Gln Gly Ala Arg	
231 236 241 246	
ggg tcc atg cca gcc tac tct ggc aac aac atg gac aaa tca gat tca	880
Gly Ser Met Pro Ala Tyr Ser Gly Asn Asn Met Asp Lys Ser Asp Ser	
247 252 257 262	
gag tta aac agt gaa gta gca gca agg aaa aga aac tta gct ctg gat	928
Glu Leu Asn Ser Glu Val Ala Ala Arg Lys Arg Asn Leu Ala Leu Asp	
263 268 273 278	
gag gct ggg cag aga tct acc atg taa aatgt tgtagagata gagccatata	980
Glu Ala Gly Gln Arg Ser Thr Met *	
279 284	
acgtcacgtt tcaaaactag ctctacagtt ttgcttctcc tattagccat atgataattg	1040

ggctatgtag tatcaatatt tactttaatc acaaaggatg gtttcttgaa ataatttgta 1100
 ttgattgagg cctatgaact gacctgaatt ggaaaggatg tgattaatat aaataatagc 1160
 agatataaat tgtgggttatg ttacctttat cttgttgagg accacaacat tagcacggtg 1220
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 actggcagca tccctgaaaa aaaaaaaaaa 1310

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 <211> 1477
 <212> DNA
 <213> Homo sapiens
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 <221> CDS
 <222> (352)..(1011)

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 gcctgggtac cttgtcggag ctggggctgg gcagccgtcc ccttcgggtcc ccaccgtggc 180
 ctcagcgtgc tgcttgcacg gatacctcag cgggcgccac ggtggctccc agcttgtaga 240
 caaaagacgt cactctcatt ccttaatcga ccagaccttc caaacctggc ttataagaag 300
 ctaaaaggca aaagtccagg aattatcttc atccctgggt atctttctta t atg aat 357
 Met Asn
 1
 ggt aca aaa gcg ttg gcg att gag gag ttt tgc aaa tct cta ggt cac 405
 Gly Thr Lys Ala Leu Ala Ile Glu Glu Phe Cys Lys Ser Leu Gly His
 3 8 13 18
 gcc tgc ata agg ttt gat tac tca gga gtt gga agt tca gat ggt aac 453
 Ala Cys Ile Arg Phe Asp Tyr Ser Gly Val Gly Ser Ser Asp Gly Asn
 19 24 29 34
 tca gag gaa agc aca ctg ggg aaa tgg aga aaa gat gtt ctt tct ata 501
 Ser Glu Glu Ser Thr Leu Gly Lys Trp Arg Lys Asp Val Leu Ser Ile
 35 40 45 50
 att gat gac tta gct gat ggg cca cag att ctt gtt gga tct agc ctt 549
 Ile Asp Asp Leu Ala Asp Gly Pro Gln Ile Leu Val Gly Ser Ser Leu
 51 56 61 66
 gga ggg tgg ctt atg ctt cat gct gca att gca cga cca gag aag gtc 597
 Gly Gly Trp Leu Met Leu His Ala Ala Ile Ala Arg Pro Glu Lys Val
 67 72 77 82

<211> 2432
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (720)..(1454)

<220>
 <221> misc_feature
 <222> (1)...(2432)
 <223> n = a,t,c or g

<400> 628

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gatccttgcg ggccaccatt ccggaagtag aatttagagg aagaaaatac cggagttgca      180
gggtataggt aaattttctca aggttatagg ttggggttct tagaactttt tgtggtgtgt      240
gttggcctag agcgactcag aagcgttagt gacttcacct aaaaaagcta acctctctgc      300
tgagcgcgac cggtatgcgg cgcaggatga gcctcagggc ttctgttaag agtctgtctg      360
agaaagccgg tctgcgctgt tctcgggtgg cgaccttaat tatgagatga gctaattgctt      420
tactgactta accatggcgc agcgggcagt gtggctcata agccacgaac cgggaactcc      480
actttgtggc accgtgagat tctccagacg gtatccaact gttgaaaaac gagccagagt      540
cttcaatgga gcaagttatg tgccgtgtcc tgaagatggt ccctttctta aagcactgct      600
ctttgaactt agattattgg atgatgataa agacttcggt gagagtcgtg atagctgttc      660

acgcatcaat aaaacatcca tttatggact cctgatagga gtgtgatttg gaaggaatc      719
atg cca aat gtt acc atc agc ttg agt ctc ccc acc aat gga tct cca      767
Met Pro Asn Val Thr Ile Ser Leu Ser Leu Pro Thr Asn Gly Ser Pro
   1             5             10             15

ctt cag gat att cta gtt cac cct tgt gta act tct ctt gac tct gca      815
Leu Gln Asp Ile Leu Val His Pro Cys Val Thr Ser Leu Asp Ser Ala
   17             22             27             32

att ctg act tct agt agt att gat gca atg gat gac tct gca ttt agt      863
Ile Leu Thr Ser Ser Ser Ile Asp Ala Met Asp Asp Ser Ala Phe Ser
   33             38             43             48

ggg cct tac aaa ttt cca ttc act cca cct tta gag tca ttc aac tta      911
Gly Pro Tyr Lys Phe Pro Phe Thr Pro Pro Leu Glu Ser Phe Asn Leu
   49             54             59             64

tgc ttc tac act tcc cag gtc cct gtc cca cca att ttg ggt ttt tat      959
Cys Phe Tyr Thr Ser Gln Val Pro Val Pro Pro Ile Leu Gly Phe Tyr
   65             70             75             80

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caa atg aag gag gaa gaa gta caa cta aga ata acc att aat tta aaa	1007
Gln Met Lys Glu Glu Glu Val Gln Leu Arg Ile Thr Ile Asn Leu Lys	
81 86 91 96	
ctt cat gaa agt gtg aaa aat aat ttt gaa ttc tgt gaa gcc cat ata	1055
Leu His Glu Ser Val Lys Asn Asn Phe Glu Phe Cys Glu Ala His Ile	
97 102 107 112	
cct ttt tac aat aga ggt cca att aca cat ttg gaa tac aaa act agt	1103
Pro Phe Tyr Asn Arg Gly Pro Ile Thr His Leu Glu Tyr Lys Thr Ser	
113 118 123 128	
ttt ggc cag ctt gaa gta ttt cga gag aaa agc tta ttg atc tgg att	1151
Phe Gly Gln Leu Glu Val Phe Arg Glu Lys Ser Leu Leu Ile Trp Ile	
129 134 139 144	
att ggc cag aag ttc cca aaa tca atg gaa att agt ctt tct gga act	1199
Ile Gly Gln Lys Phe Pro Lys Ser Met Glu Ile Ser Leu Ser Gly Thr	
145 150 155 160	
gta act ttt gga gcc aag agc cat gag aag cag cca ttt gac cca att	1247
Val Thr Phe Gly Ala Lys Ser His Glu Lys Gln Pro Phe Asp Pro Ile	
161 166 171 176	
tgt act gga gaa aca gca tat tta aag ctt cat ttt agg atc tta gat	1295
Cys Thr Gly Glu Thr Ala Tyr Leu Lys Leu His Phe Arg Ile Leu Asp	
177 182 187 192	
tac aca ctt act gga tgt tat gca gat cag cat tca gtt caa gtt ttt	1343
Tyr Thr Leu Thr Gly Cys Tyr Ala Asp Gln His Ser Val Gln Val Phe	
193 198 203 208	
gca tca gga aaa cca aaa ata agt gca cac cgg aaa cta att tct tct	1391
Ala Ser Gly Lys Pro Lys Ile Ser Ala His Arg Lys Leu Ile Ser Ser	
209 214 219 224	
gat tat tac atc tgg aat tct aaa gcc cct gct cca gta aca tat gga	1439
Asp Tyr Tyr Ile Trp Asn Ser Lys Ala Pro Ala Pro Val Thr Tyr Gly	
225 230 235 240	
tca tta tta ttg taa tagtctcatg tttaaagggtg attatataat gataacagtt	1494
Ser Leu Leu Leu *	
241	
taaagaaaat cataatctta tttttttaat gtggatgcat ataacctgtg agtgaaaaat	1554
cactgaatga tttaattgta aaagtagtct tatgtggtgt ttgtagtctg atagagcttg	1614
aaaggacatt ttaaaagcta atgtctccaa ttttggttaac cttcgatttt atgccagtat	1674
aattcagaac atagaaaagt aatgattcac ttggggtcat tttagactgg tcttgggtca	1734
ccctgccaca cttgtttcct agtgtttctg tggcagacat tgctaataca ttacagccct	1794
tttctgta ct gagccttgga taaaggggtca ggctcctttt tagttcagag attcaggcag	1854
ccactcccag tgggtttag ataatgtgca agataaaaac ttttttctct tccaaatcta	1914

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agtactaagc tcctagtata aggtgttggt acagaatacc agagaccatg ttagagacaa 1974
ctacatctct tcaaaaaaca gccaacagag acaaaggaaa agtggtttaa tagtaagctg 2034
ttcttcttaa tcagaactat cctattgact aataaataat ctgcataatt ctacttaagg 2094
tgtgtaatct ctgttctaga gttagttttt aagtaagctt gttaatctgc cactttgaca 2154
ttttgcttag gatgtcagta gccatattaa gatgtgtaga ataccttcag aagatgatca 2214
tagtgttttg taatcattta atgtctgcag ccaaattttt aaaggtaatt tagacctaatt 2274
actgctcttg ctgtgtctta ttaagttaaa attaataaat gaattctggt aaaaattcaa 2334
aanggcactc tgtgagtaga gaagtatcat ttaagcttat tttagtcaca tgtagtatat 2394
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<210> 629
<211> 1883
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (317) .. (586)

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<220>
<221> misc_feature
<222> (1) ... (1883)
<223> n = a,t,c or g

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cgcgggcgcc ccggcagccc cggcggcccc gcgcagccgc tccctcggcg gggccgtggg 120
gagcgtggcg tcggggggccc gcgcggcgca gtcccccttc agcatcccga acagcagcag 180
cggcccgtac ggctcgcagg actcgggtgca cagcagccct gaggacggcg gcggcgggcg 240
ggaccggccg gtgggcggga gccccggcgg gccgcgcctg gtgatcggct ccttaccagc 300
tcacctctcg ccgcac      atg ttt gga gga ttt aag tgc cct gta tgc tca 349
                        Met Phe Gly Gly Phe Lys Cys Pro Val Cys Ser
                          1             5

aaa ttt gta tcc tca gat gaa atg gat ttg cat ctt gta atg tgt tta 397
Lys Phe Val Ser Ser Asp Glu Met Asp Leu His Leu Val Met Cys Leu
 12             17             22             27

aca aag cca cga ata acc tat aat gag gat gta ctg agt aaa gat gct 445
Thr Lys Pro Arg Ile Thr Tyr Asn Glu Asp Val Leu Ser Lys Asp Ala

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28	33	38	43	
ggg gaa tgt gca ata tgc ctt gaa gaa ttg cag cag gga gat act ata				493
Gly Glu Cys Ala Ile Cys Leu Glu Glu Leu Gln Gln Gly Asp Thr Ile				
44	49	54	59	
gca cga ctg cct tgt cta tgc ata tat cat aaa ggc tgc ata gat gaa				541
Ala Arg Leu Pro Cys Leu Cys Ile Tyr His Lys Gly Cys Ile Asp Glu				
60	65	70	75	
tgg ttt gaa gta aat aga tct tgc cct gag cac cct tca gat taa gcg				589
Trp Phe Glu Val Asn Arg Ser Cys Pro Glu His Pro Ser Asp *				
76	81	86		
tcagcttctt gttttatagg ttttcttgtc ttgacaagat gcttgaaaaa ccaagaggat				649
atgaaaatct gtctctggag aaacaaagac gcaggcatac tcagccagaa atctgagttt				709
tgtgagactt ggtaatacag agatggacaa tcgtactggg gtaaaaaaac cctgctgaag				769
agaggacagt gaccacagaa ctcaagtgtac caaacatgca taaaaaggac acacagggat				829
tttgaaaatg ctgcacatcc cttaatagtc atctacatag gtaatactga taaacatttt				889
gtattcagac gccaaagtta actgatttaa aagttgattt actttttatt aagttctcca				949
gagctgcaca actagttatg ttttgatttg ttttgttttt taatttgggg tctctttggt				1009
ttccccaaca taatgttcat aatgtttctg cattcatctg ttcttaaatt gaaaaacata				1069
taatttactt cttataaatt gaagtcttaa atgtgaaacc aagaaatgta atcaagcagt				1129
aaaaacatct gaatgtagac catgatctca agttcttcca ttttctcccc cagagtgga				1189
aaatagactt ctacatagga aagctaaaaat atgttaatat ttttaaatta aaggtttaat				1249
atcagaatgc agtccaaaga gcaaatcata ttacataatt acattttaat taaatataga				1309
atattctact gaattgcaat ttattaaata ttcttctctt cttaaataaa actgctcaac				1369
agttaatcag cagtgaatca tcttgagct atgcaattta aaaaaaac agattaccaa				1429
tttcaagtgc tgccagctaa aataactgtt ttaacgggta tcttttggtt gttcttttca				1489
cttaattatt ttattgtgct ttgcatctcc aggcagttct ctacatttg ggtaaaatgt				1549
ttagcaggct gtaaacttaa gaaaagggtta aaataaaatt ttctggagag gaacttgga				1609
tttgagggag attttatata cttttaaaaa ctgtaattta attgggatgc caggtttata				1669
gcaatttgca actttaattt tccagataat ctggagggtta gcatttgata aatgattttt				1729
taaagtagat atgaagattt tgttaattta taatttattc atgtgttatt actgtaattg				1789
aaaatgttat agacactttt aaattcagtt tgtgtagaaa gaaatgtgtt aaacaaaatt				1849
atgttaataa atattccac ataaaaaaaaaaaa				1883

<210> 630
 <211> 1150
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (717)..(863)

<400> 630

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aaccctgagt ttctgagtca agactgagct ggtggggtgg ggaccgagta ggcgtggatg      180
gggagcccag cgggtcccag cggagaaaat gggtagagacg cctggggccg cggctctccag      240
aattcgcttg ggagggagag tggcgctacg gcgccatgtc catggggagc cgcttcgggc      300
tccggagtgt ccgctggggc ccgacgcttg ggtcccgacg cgcggttcgc actttccagg      360
tttcttcccc agggaacaga gcttgagcgg ggggccaccc ccccgtccta ccggagttct      420
gagggtgcggt caggcgcgga gagcggacgc ccagcgccag attctgtggg ctccggagtt      480
cagggccact gagccgcagc tgagcacagg cggggcagga aaaaggatga ggtaagtttg      540
ttcctgtcaa ttgggaaccc cctcaaccac ttccaattccc caaataacctg cgctgctacc      600
gatgcctctt ggagaccaag gagttagggg gccttctggg atctgacatc tgcctcaccc      660
cagctggcag cagctgcac actctccaca aaaagaacag cagcggttct gacgtc      716
atg gtg agt gac tgc cga agt aag gag cag atg agt gat tgt tca aat      764
Met Val Ser Asp Cys Arg Ser Lys Glu Gln Met Ser Asp Cys Ser Asn
  1             5             10            15

acc cga act tct ccg gtg tct ggc ttc tgg ata ttc tct caa tac tgc      812
Thr Arg Thr Ser Pro Val Ser Gly Phe Trp Ile Phe Ser Gln Tyr Cys
  17             22             27            32

ttc ctg gat ttc tgc aat gac cct caa aac aga ggg ctc tat act cct      860
Phe Leu Asp Phe Cys Asn Asp Pro Gln Asn Arg Gly Leu Tyr Thr Pro
  33             38             43            48

tag tgtg actgcagcaa actttggtgt aaaattccac cagtttccag ccaccttct      917
*
49

gacttctatc tgggcttggc caggacttct agtccctcat accagccctc cttgcctccc      977
tccagccact ggaccccagc cttggctctt cctcttggtt gacgcccttc agcacactta     1037
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ctgctactct gtacccccag ccctactgcc caccagggttt cctctcttgt cccctagtc 1097
ctggatgttt ctcccaaata aatttgtgtg taaactgtta aaaaaaaaaa aaa 1150

<210> 631
<211> 712
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (193) .. (423)

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aatccccctg cagaacctca aaccacttag agatcaactc catagatctt tggttttctt 180
catctgtttc ac atg gaa cac agc ttt ctc cta gtc tgt gct ttg ttt 228
Met Glu His Ser Phe Leu Leu Val Cys Ala Leu Phe
1 5 10
gct cac gtg ttt ttt tct tcc tct tgt ggt tca tct gtg gca ctc cat 276
Ala His Val Phe Phe Ser Ser Ser Cys Gly Ser Ser Val Ala Leu His
13 18 23 28
tcc gac cct tgc ctt ctg tcc cct gta ctt ctg aac tgt ctc cct ggg 324
Ser Asp Pro Cys Leu Leu Ser Pro Val Leu Leu Asn Cys Leu Pro Gly
29 34 39 44
gac ctc cgc cct cta gat gag tta tac gct cag aag ctc aag tac aaa 372
Asp Leu Arg Pro Leu Asp Glu Leu Tyr Ala Gln Lys Leu Lys Tyr Lys
45 50 55 60
gct atc agc gag gaa ctg gac cac gct ctc aac gac atg acc tct ctc 420
Ala Ile Ser Glu Glu Leu Asp His Ala Leu Asn Asp Met Thr Ser Leu
61 66 71 76
tga gagg cagccaggtc gctgccctct gtccttctca catggtgcct cctacgcccc 477
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77
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gatgtgtctg tgactctaca accgaaataa agacgggcag tcctcctctt catgccccct 597
cattctcatt ttctccactt gctgcctttg agctgtagct gtgtgccctt aaccatagcc 657
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (338) .. (2038)

<400> 632

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agaaaaacat ccgggtcaag cactatcttc tgaaccttgg aactttcctg atacaaagga	180
agaatggggag caacattata gtcaacttta ttgggtattat ttggaacaat ttcagtattg	240
ggaagctcag ggttggactt ttgatgcctc gcaaagctgt gatacagata cttacacatc	300
taaaacagaa gctgatgaca agaacgatga aaaatgc atg aaa gtt gac tta gta	355
Met Lys Val Asp Leu Val	
1	
tct ttt cca tct tca cct att atg ggt gat aat gat agc tct ggt aca	403
Ser Phe Pro Ser Ser Pro Ile Met Gly Asp Asn Asp Ser Ser Gly Thr	
7 12 17 22	
agt gat aag gat cat agt gaa ata ctt gat gga att agt aac ata aaa	451
Ser Asp Lys Asp His Ser Glu Ile Leu Asp Gly Ile Ser Asn Ile Lys	
23 28 33 38	
ctg aat tca gag gaa gta aca cag agc caa tta gat tcc tgt aca agt	499
Leu Asn Ser Glu Glu Val Thr Gln Ser Gln Leu Asp Ser Cys Thr Ser	
39 44 49 54	
cat gat ggt cat caa cag cta agt gaa gtt agt agc aaa aga gag tgc	547
His Asp Gly His Gln Gln Leu Ser Glu Val Ser Ser Lys Arg Glu Cys	
55 60 65 70	
cct gct tcc ggc caa agt gaa cca cgt aat gga gga acc aat gag gaa	595
Pro Ala Ser Gly Gln Ser Glu Pro Arg Asn Gly Gly Thr Asn Glu Glu	
71 76 81 86	
agc aac tca tcg ggg aat aca aac aca gac cca cca gct gag gat tca	643
Ser Asn Ser Ser Gly Asn Thr Asn Thr Asp Pro Pro Ala Glu Asp Ser	
87 92 97 102	
cag aag tct tca gga gca aac aca agc aaa gac aga cca cat gcc agt	691
Gln Lys Ser Ser Gly Ala Asn Thr Ser Lys Asp Arg Pro His Ala Ser	
103 108 113 118	
ggg act gat gga gat gaa agt gag gaa gac cca cct gag cat aag cca	739
Gly Thr Asp Gly Asp Glu Ser Glu Glu Asp Pro Pro Glu His Lys Pro	
119 124 129 134	

agc aaa ctg aag agg agc cat gaa ctg gac att gat gaa aac cca gct	787
Ser Lys Leu Lys Arg Ser His Glu Leu Asp Ile Asp Glu Asn Pro Ala	
135 140 145 150	
tca gac ttt gat gac agt ggt tcc ctt cta gga ttc aag tat ggc tca	835
Ser Asp Phe Asp Asp Ser Gly Ser Leu Leu Gly Phe Lys Tyr Gly Ser	
151 156 161 166	
gga caa aaa tat ggt gga atc cca aat ttc agt cat cgg cag gtc agg	883
Gly Gln Lys Tyr Gly Gly Ile Pro Asn Phe Ser His Arg Gln Val Arg	
167 172 177 182	
tat tta gag aag aat gtg aag ctt aag tct aag tac cta gac atg cgc	931
Tyr Leu Glu Lys Asn Val Lys Leu Lys Ser Lys Tyr Leu Asp Met Arg	
183 188 193 198	
aga caa ata aag atg aaa aac aaa cac atc ttc ttt acc aaa gag tca	979
Arg Gln Ile Lys Met Lys Asn Lys His Ile Phe Phe Thr Lys Glu Ser	
199 204 209 214	
gaa aaa cca ttt ttc aag aaa agc aaa att ctg agt aag gta gaa aaa	1027
Glu Lys Pro Phe Phe Lys Lys Ser Lys Ile Leu Ser Lys Val Glu Lys	
215 220 225 230	
ttc ctc aca tgg gtt aat aaa cca atg gat gaa gaa gca tca cag gaa	1075
Phe Leu Thr Trp Val Asn Lys Pro Met Asp Glu Glu Ala Ser Gln Glu	
231 236 241 246	
tca tct tct cat gac aat ggg cac gac gct tcc aca agt tgt gat tca	1123
Ser Ser Ser His Asp Asn Gly His Asp Ala Ser Thr Ser Cys Asp Ser	
247 252 257 262	
gag gaa caa gac atg tct gtt aaa aaa ggt gat gac cta ctg gag act	1171
Glu Glu Gln Asp Met Ser Val Lys Lys Gly Asp Asp Leu Leu Glu Thr	
263 268 273 278	
aat aat cca gaa cct gaa aag tgt cag agc gta tct tca gct ggt gaa	1219
Asn Asn Pro Glu Pro Glu Lys Cys Gln Ser Val Ser Ser Ala Gly Glu	
279 284 289 294	
ctt gaa aca gaa aac tat gaa aga gac agc ttg cta gca act gtt cca	1267
Leu Glu Thr Glu Asn Tyr Glu Arg Asp Ser Leu Leu Ala Thr Val Pro	
295 300 305 310	
gat gag cag gat tgt gtt act caa gaa gtg cca gac tcc cgc cag gca	1315
Asp Glu Gln Asp Cys Val Thr Gln Glu Val Pro Asp Ser Arg Gln Ala	
311 316 321 326	
gaa act gaa gct gaa gtg aaa aag aag aag aac aag aag aag aac aaa	1363
Glu Thr Glu Ala Glu Val Lys Lys Lys Lys Asn Lys Lys Lys Asn Lys	
327 332 337 342	
aag gtg aat ggt ctg cct cct gaa ata gct gct gtt cct gag ctg gca	1411
Lys Val Asn Gly Leu Pro Pro Glu Ile Ala Ala Val Pro Glu Leu Ala	
343 348 353 358	
aaa tac tgg gcc cag agg tac agg ctc ttc tcc cgt ttt gat gat ggg	1459

Lys Tyr Trp Ala Gln Arg Tyr Arg Leu Phe Ser Arg Phe Asp Asp Gly	
359 364 369 374	
att aag ttg gac aga gag ggc tgg ttt tca gtt aca ccc gag aag att	1507
Ile Lys Leu Asp Arg Glu Gly Trp Phe Ser Val Thr Pro Glu Lys Ile	
375 380 385 390	
gct gaa cac att gct ggc cgt gtt agt cag tcc ttc aag tgt gac gtt	1555
Ala Glu His Ile Ala Gly Arg Val Ser Gln Ser Phe Lys Cys Asp Val	
391 396 401 406	
gta gta gac gca ttc tgt gga gtt gga gga aat acc att cag ttt gcc	1603
Val Val Asp Ala Phe Cys Gly Val Gly Gly Asn Thr Ile Gln Phe Ala	
407 412 417 422	
tta aca gga atg aga gtg att gcc att gat atc gat cct gtt aag att	1651
Leu Thr Gly Met Arg Val Ile Ala Ile Asp Ile Asp Pro Val Lys Ile	
423 428 433 438	
gcc ctt gct cgc aat aat gca gaa gtt tat ggg ata gca gat aag ata	1699
Ala Leu Ala Arg Asn Asn Ala Glu Val Tyr Gly Ile Ala Asp Lys Ile	
439 444 449 454	
gag ttc atc tgt gga gat ttc ttg ctg ctg gct tct ttt tta aag gct	1747
Glu Phe Ile Cys Gly Asp Phe Leu Leu Leu Ala Ser Phe Leu Lys Ala	
455 460 465 470	
gat gtt gtg ttc ctc agc cca cct tgg gga ggg cca gac tat gcc act	1795
Asp Val Val Phe Leu Ser Pro Pro Trp Gly Gly Pro Asp Tyr Ala Thr	
471 476 481 486	
gca gag acc ttt gac att aga aca atg atg tct cct gat ggc ttt gaa	1843
Ala Glu Thr Phe Asp Ile Arg Thr Met Met Ser Pro Asp Gly Phe Glu	
487 492 497 502	
att ttc aga ctt tct aag aag atc act aat aat att gtt tat ttt ctt	1891
Ile Phe Arg Leu Ser Lys Lys Ile Thr Asn Asn Ile Val Tyr Phe Leu	
503 508 513 518	
cca aga aat gct gat att gac cag gtg gca tcc tta gct ggg cct gga	1939
Pro Arg Asn Ala Asp Ile Asp Gln Val Ala Ser Leu Ala Gly Pro Gly	
519 524 529 534	
ggg caa gtg gaa ata gaa cag aac ttc ctt aac aac aaa ttg aag aca	1987
Gly Gln Val Glu Ile Glu Gln Asn Phe Leu Asn Asn Lys Leu Lys Thr	
535 540 545 550	
atc act gca tat ttt ggt gac cta att cga aga cca gcc tct gaa acc	2035
Ile Thr Ala Tyr Phe Gly Asp Leu Ile Arg Arg Pro Ala Ser Glu Thr	
551 556 561 566	
tta ctat gcagcagtgc gaggacaaaa gatcatggag tgggtcaaaat attcagatga	2092
* 567	
gacatttggc atgtcttctt ttattcactg atattttcta cccatgggtct tatatcaccg	2152

tatgaaatgg aaacttacag gacttaaata tcagtgaaat attttgagat ctttgaataa	2212
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gcttttaggtt ggcaactgcac accgtactaa tttttgtatt tttttagag acgaggtccc	2452
accatgttgc ccaggctggt gtcaaaactcc tgggctcagt cagtcccccc atctcaccct	2512
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caggagggga cctcaggcat ccaggggagg tgaggaggga cattactttg tcaggacatc	180
caagactcag tactcagcat gttgtgctcc tgaggggagga tgagggttga gatccaggaa	240
ccaaagacct gggccacccc cagcatggca gtcccatcca ggagacacag agtgaggtgg	300
tcaccctggt cagtccactc ccaggggagtg ac atg gca gct tta ccg gct tgg	353
Met Ala Ala Leu Pro Ala Trp	
1 5	
aga gct act tct ggg ctg aca ctc tgg ccc cat aca gca gaa ggc agg	401
Arg Ala Thr Ser Gly Leu Thr Leu Trp Pro His Thr Ala Glu Gly Arg	
8 13 18 23	
gat ctg ctg gga gct gag aac aga gcc ttg act ggt ggg caa caa gca	449
Asp Leu Leu Gly Ala Glu Asn Arg Ala Leu Thr Gly Gly Gln Gln Ala	
24 29 34 39	
gag gat ccc acc ttg gcc tca ggg gct tat cag tgg cct ggc tct gtt	497
Glu Asp Pro Thr Leu Ala Ser Gly Ala Tyr Gln Trp Pro Gly Ser Val	
40 45 50 55	
gag aag ctg caa ggg tca gta tgg tgt gat gct gag acg ctg ttg agc	545
Glu Lys Leu Gln Gly Ser Val Trp Cys Asp Ala Glu Thr Leu Leu Ser	

56	61	66	71	
agc tcg agg act ggt ggg cag gct ccc cca tgg ctg aca gac cac gat				593
Ser Ser Arg Thr Gly Gly Gln Ala Pro Pro Trp Leu Thr Asp His Asp				
72	77	82	87	
gtg cag atg ctc cgt ctg ttg gca cag ggg gag gtg gtg gac aaa gcc				641
Val Gln Met Leu Arg Leu Leu Ala Gln Gly Glu Val Val Asp Lys Ala				
88	93	98	103	
agg gtc ccc gcc cat ggg cag gtg cta cag gtt ggc ttc tcc act gag				689
Arg Val Pro Ala His Gly Gln Val Leu Gln Val Gly Phe Ser Thr Glu				
104	109	114	119	
gct gcc ctt cag gac ctg tcc tct ccc agg ctc agc caa ctc tgt tcc				737
Ala Ala Leu Gln Asp Leu Ser Ser Pro Arg Leu Ser Gln Leu Cys Ser				
120	125	130	135	
caa ggg ctc tgt ggc ctg atc aag agg cct ggg gac ctg cct gag gtc				785
Gln Gly Leu Cys Gly Leu Ile Lys Arg Pro Gly Asp Leu Pro Glu Val				
136	141	146	151	
ctg tcc ttc cac gta gat cgt gtg ctg ggg ctg cgc cgg agc cta cct				833
Leu Ser Phe His Val Asp Arg Val Leu Gly Leu Arg Arg Ser Leu Pro				
152	157	162	167	
gct gtg gcc cgc cgc ttc cat agc ccc ctc ctg ccc tac cga tac aca				881
Ala Val Ala Arg Arg Phe His Ser Pro Leu Leu Pro Tyr Arg Tyr Thr				
168	173	178	183	
gac ggt gga gca agg cct gtc atc tgg tgg gcg ccc gat gtg cag cac				929
Asp Gly Gly Ala Arg Pro Val Ile Trp Trp Ala Pro Asp Val Gln His				
184	189	194	199	
ctg agc gac cca gat gag gat cag aac tct ctg gcc ttg ggc tgg ctg				977
Leu Ser Asp Pro Asp Glu Asp Gln Asn Ser Leu Ala Leu Gly Trp Leu				
200	205	210	215	
cag tat cag gcc ctg ctg gca cac agc tgc aac tgg cca ggc cag gcc				1025
Gln Tyr Gln Ala Leu Leu Ala His Ser Cys Asn Trp Pro Gly Gln Ala				
216	221	226	231	
ccg tgc ccg ggc atc cac cat acc gag tgg gca cgc ctg gcg ctc ttc				1073
Pro Cys Pro Gly Ile His His Thr Glu Trp Ala Arg Leu Ala Leu Phe				
232	237	242	247	
gac ttc ctg ttg cag gtc cac gac cgc ttg gat cgc tac tgc tgt ggc				1121
Asp Phe Leu Leu Gln Val His Asp Arg Leu Asp Arg Tyr Cys Cys Gly				
248	253	258	263	
ttc gag cct gag ccc tca gac ccc tgt gtg gaa gag agg ctc cga gag				1169
Phe Glu Pro Glu Pro Ser Asp Pro Cys Val Glu Glu Arg Leu Arg Glu				
264	269	274	279	
aaa tgc cgg aac cca gcc gag ctg cgg ctg gtc cac atc ctg gtc cgg				1217
Lys Cys Arg Asn Pro Ala Glu Leu Arg Leu Val His Ile Leu Val Arg				
280	285	290	295	

agc agc gat cca tct cac ctg gtc tac atc gat aac gct ggc aac ctt	1265
Ser Ser Asp Pro Ser His Leu Val Tyr Ile Asp Asn Ala Gly Asn Leu	
296 301 306 311	
cag cac cct gag gac aag ctg aac ttt cgg ctg ctg gag ggc ata gat	1313
Gln His Pro Glu Asp Lys Leu Asn Phe Arg Leu Leu Glu Gly Ile Asp	
312 317 322 327	
ggg ttt cct gag tct gcc gtg aag gtt ctc gca tca ggg tgt ctg cag	1361
Gly Phe Pro Glu Ser Ala Val Lys Val Leu Ala Ser Gly Cys Leu Gln	
328 333 338 343	
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Asn Met Leu Leu Lys Ser Leu Gln Met Asp Pro Val Phe Trp Glu Ser	
344 349 354 359	
caa ggc gga gcc cag ggg ctg aag cag gtc ctc cag acc ctg gag cag	1457
Gln Gly Gly Ala Gln Gly Leu Lys Gln Val Leu Gln Thr Leu Glu Gln	
360 365 370 375	
cga gga cag gtg ctg ctg gga cac atc caa aag cac aac ctc aca ctc	1505
Arg Gly Gln Val Leu Leu Gly His Ile Gln Lys His Asn Leu Thr Leu	
376 381 386 391	
ttc agg gac gag gac cca taa gc cgcacacagc cctgagtcaa tgagcatcca	1558
Phe Arg Asp Glu Asp Pro *	
392 397	
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tgatgcacgt gcatatgcag agtgggagaa ctttgtgtgt gtgtagaggt gtgtaggtgt	1858
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gtttttgggt taaaaaatta taaaagtcta aaagtaatac atgctcagta aaaacaagtc	2098
cataaaaaat agaagcatat gacaaaaagc ataagtccca caaactccct agcgggtgtgt	2158
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atgctttgtc aactcactat atttttactt tattaactat attctgtatc agccatctga	2278
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ctttagctgg tcccataatc atgaacattt aagtagctcc aatttttcat caattacaga	2398

cattgccgcc atgaacatga ttgcatggcg tgcaagtatt tctgcgaggt agatttccgt 2458
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tggatgaatgc cctggagttg tgagggtgtg agggtcgcgt tcctgctgtc tggacttttt 180
ctgtcccact gagacgcagc tgtattctgt ttgcagtgtg aaat atg att tgg cga 236
Met Ile Trp Arg
1
gga aga tca aca tat agg cct agg ccg agg aga agt gta cca cct cct 284
Gly Arg Ser Thr Tyr Arg Pro Arg Pro Arg Arg Ser Val Pro Pro Pro
5 10 15 20
gag ctg att ggg cct atg ctg gag ccc ggt gat gag gag cct cag caa 332
Glu Leu Ile Gly Pro Met Leu Glu Pro Gly Asp Glu Glu Pro Gln Gln
21 26 31 36
gag gaa cca cca act gaa agt cgg gat cct gca cct ggt cag gag aga 380
Glu Glu Pro Pro Thr Glu Ser Arg Asp Pro Ala Pro Gly Gln Glu Arg
37 42 47 52
gaa gaa gat cag ggt gca gct gag act caa gtg cct gac ctg gaa gct 428
Glu Glu Asp Gln Gly Ala Ala Glu Thr Gln Val Pro Asp Leu Glu Ala
53 58 63 68
gat ctc cag gag ctg tct cag tca aag act ggg ggt gaa tgt gga aat 476
Asp Leu Gln Glu Leu Ser Gln Ser Lys Thr Gly Gly Glu Cys Gly Asn

69	74	79	84	
ggg cct gat gac cag ggg aag att ctg cca aaa tca gaa caa ttt aaa				524
Gly Pro Asp Asp Gln Gly Lys Ile Leu Pro Lys Ser Glu Gln Phe Lys				
85	90	95	100	
atg cca gaa gga ggt gac agg caa cca cag gtt taa atga agacaagctg				574
Met Pro Glu Gly Gly Asp Arg Gln Pro Gln Val *				
101	106	111		
aaacaacaca aaactgtttt tatctaagat atttgactta aaaatatcga aataaacttt				634
tcgagctttc tccaaaaaaa aaaaa				659

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 <213> Homo sapiens

<220>
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tcg acc cac gcg tcc gcg gac gcg tgg gcg cac acc ttc ctc atc cac	95	
Ser Thr His Ala Ser Ala Asp Ala Trp Ala His Thr Phe Leu Ile His		
16	21 26 31	
agc tat aca cgg ccc acc gtt tgc cag gct tgc aag aaa ctc ctc aag	143	
Ser Tyr Thr Arg Pro Thr Val Cys Gln Ala Cys Lys Lys Leu Leu Lys		
32	37 42 47	
ggc ctc ttc cgg cag ggc ctg caa tgc aaa gac tgc aag ttt aac tgt	191	
Gly Leu Phe Arg Gln Gly Leu Gln Cys Lys Asp Cys Lys Phe Asn Cys		
48	53 58 63	
cac aaa cgc tgc gcc acc cgc gtc cct aat gac tgc ctg ggg gag gcc	239	
His Lys Arg Cys Ala Thr Arg Val Pro Asn Asp Cys Leu Gly Glu Ala		
64	69 74 79	
ctt atc aat gga gat gtg ccg atg gag gag gcc acc gat ttc agc gag	287	
Leu Ile Asn Gly Asp Val Pro Met Glu Glu Ala Thr Asp Phe Ser Glu		
80	85 90 95	
gct gac aag agc gcc ctc atg gat gag tca gag gac tcc ggt gtc atc	335	
Ala Asp Lys Ser Ala Leu Met Asp Glu Ser Glu Asp Ser Gly Val Ile		
96	101 106 111	
cct ggc tcc cac tca gag aat gcg ctc cac gcc agt gag gag gag gaa	383	
Pro Gly Ser His Ser Glu Asn Ala Leu His Ala Ser Glu Glu Glu Glu		

112	117	122	127	
ggc gag gga ggc aag gcc cag agc tcc ctg ggg tac atc ccc cta atg				431
Gly Glu Gly Gly Lys Ala Gln Ser Ser Leu Gly Tyr Ile Pro Leu Met				
128	133	138	143	
agg gtg gtg caa tcg gtg cga cac acg acg cgg aaa tcc agc acc acg				479
Arg Val Val Gln Ser Val Arg His Thr Thr Arg Lys Ser Ser Thr Thr				
144	149	154	159	
ctg cgg gag ggt tgg gtg gtt cat tac agc aac aag gac acg ctg aga				527
Leu Arg Glu Gly Trp Val Val His Tyr Ser Asn Lys Asp Thr Leu Arg				
160	165	170	175	
aag cgg cac tat tgg cgc ctg gac tgc aag tgt atc acg ctc ttc cag				575
Lys Arg His Tyr Trp Arg Leu Asp Cys Lys Cys Ile Thr Leu Phe Gln				
176	181	186	191	
aac aac acg acc aac aga tac tat aag gaa att ccg ctg tca gaa atc				623
Asn Asn Thr Thr Asn Arg Tyr Tyr Lys Glu Ile Pro Leu Ser Glu Ile				
192	197	202	207	
ctc acg gtg gag tcc gcc cag aac ttc agc ctt gtg ccg ccg ggc acc				671
Leu Thr Val Glu Ser Ala Gln Asn Phe Ser Leu Val Pro Pro Gly Thr				
208	213	218	223	
aac cca cac tgc ttt gag atc gtc act gcc aat gcc acc tac ttc gtg				719
Asn Pro His Cys Phe Glu Ile Val Thr Ala Asn Ala Thr Tyr Phe Val				
224	229	234	239	
ggc gag atg cct ggc ggg act ccg ggt ggg cca agt ggg cag ggg gct				767
Gly Glu Met Pro Gly Gly Thr Pro Gly Gly Pro Ser Gly Gln Gly Ala				
240	245	250	255	
gag gcc gcc cgg ggc tgg gag aca gcc atc cgc cag gcc ctg atg ccc				815
Glu Ala Ala Arg Gly Trp Glu Thr Ala Ile Arg Gln Ala Leu Met Pro				
256	261	266	271	
gtc atc ctt cag gac gca ccc agc gcc cca ggc cac gcg ccc cac aga				863
Val Ile Leu Gln Asp Ala Pro Ser Ala Pro Gly His Ala Pro His Arg				
272	277	282	287	
caa gct tct ctg agc atc tct gtg tcc aac agt cag atc caa gag aat				911
Gln Ala Ser Leu Ser Ile Ser Val Ser Asn Ser Gln Ile Gln Glu Asn				
288	293	298	303	
gtg gac att gcc act gtc tac cag atc ttc cct gac gaa gtg ctg ggc				959
Val Asp Ile Ala Thr Val Tyr Gln Ile Phe Pro Asp Glu Val Leu Gly				
304	309	314	319	
tca ggg cag ttt gga gtg gtc tat gga gga aaa cac cgg aag aca ggc				1007
Ser Gly Gln Phe Gly Val Val Tyr Gly Gly Lys His Arg Lys Thr Gly				
320	325	330	335	
cgg gac gtg gca gtt aag gtc att gac aaa ctg cgc ttc cct acc aag				1055
Arg Asp Val Ala Val Lys Val Ile Asp Lys Leu Arg Phe Pro Thr Lys				
336	341	346	351	

tcc cgt gtt acc tgg gac agc acc ttc tgc gcc gtc aac ccc aag ttc	444
Ser Arg Val Thr Trp Asp Ser Thr Phe Cys Ala Val Asn Pro Lys Phe	
32 37 42 47	
ctg gcg gtg att gtg gag gcc agt gga ggg ggt gcc ttt ctg gtg ctc	492
Leu Ala Val Ile Val Glu Ala Ser Gly Gly Gly Ala Phe Leu Val Leu	
48 53 58 63	
ccc cta agc aag acg ggc cgc att gac aag gcc tac ccg acg gtg tgt	540
Pro Leu Ser Lys Thr Gly Arg Ile Asp Lys Ala Tyr Pro Thr Val Cys	
64 69 74 79	
ggg cac acg gga cct gtc ctg gac atc gac tgg tgt cct cac aac gac	588
Gly His Thr Gly Pro Val Leu Asp Ile Asp Trp Cys Pro His Asn Asp	
80 85 90 95	
gaa gtc ata gcc agc ggc tcg gag gac tgc acg gtc atg gtg tgg cag	636
Glu Val Ile Ala Ser Gly Ser Glu Asp Cys Thr Val Met Val Trp Gln	
96 101 106 111	
atc cca gag aac ggg ctg acc tcc ccg ctg aca gag ccg gtg gtg gta	684
Ile Pro Glu Asn Gly Leu Thr Ser Pro Leu Thr Glu Pro Val Val Val	
112 117 122 127	
ctg gag ggg cac acc aag cga gtg ggc atc atc gcc tgg cac ccc acg	732
Leu Glu Gly His Thr Lys Arg Val Gly Ile Ile Ala Trp His Pro Thr	
128 133 138 143	
gcc cga aac gtg ctg ctc agt gca ggc tgc gac aac gtg gta ctc atc	780
Ala Arg Asn Val Leu Leu Ser Ala Gly Cys Asp Asn Val Val Leu Ile	
144 149 154 159	
tgg aat gtg ggc aca gcg gag gag ctg tac cgc ctg gac agc ctg cac	828
Trp Asn Val Gly Thr Ala Glu Glu Leu Tyr Arg Leu Asp Ser Leu His	
160 165 170 175	
cct gac ctc atc tac aat gtc agc tgg aac cac aat ggc agc ctg ttt	876
Pro Asp Leu Ile Tyr Asn Val Ser Trp Asn His Asn Gly Ser Leu Phe	
176 181 186 191	
tgc tca gca tgc aag gac aag agc gtg cgc atc atc gac ccc cgt cgg	924
Cys Ser Ala Cys Lys Asp Lys Ser Val Arg Ile Ile Asp Pro Arg Arg	
192 197 202 207	
ggc acc ctg gtg gca gag cgg gag aag gct cat gag ggg gcc cgg ccc	972
Gly Thr Leu Val Ala Glu Arg Glu Lys Ala His Glu Gly Ala Arg Pro	
208 213 218 223	
atg cgg gcc atc ttc ctg gca gat ggc aag gtg ttc acc aca ggc ttc	1020
Met Arg Ala Ile Phe Leu Ala Asp Gly Lys Val Phe Thr Thr Gly Phe	
224 229 234 239	
agc cga atg agc gag cgg cag ctg gcg ctc tgg gac cca gaa aac ctc	1068
Ser Arg Met Ser Glu Arg Gln Leu Ala Leu Trp Asp Pro Glu Asn Leu	
240 245 250 255	
gag gaa ccc atg gcc ctg cag gaa ctg gac tcg agc aac ggg gcc ctg	1116

Glu Glu Pro Met Ala Leu Gln Glu Leu Asp Ser Ser Asn Gly Ala Leu	
256 261 266 271	
ctg ccc ttc tac gac ccc gac acc agt gtg gtc tac gtc tgc ggc aag	1164
Leu Pro Phe Tyr Asp Pro Asp Thr Ser Val Val Tyr Val Cys Gly Lys	
272 277 282 287	
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Gly Asp Ser Ser Ile Arg Tyr Phe Glu Ile Thr Glu Glu Pro Pro Tyr	
288 293 298 303	
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Ile His Phe Leu Asn Thr Phe Thr Ser Lys Glu Pro Gln Arg Gly Met	
304 309 314 319	
ggc agc atg ccc aag cgg ggc ctg gag gtc agc aag tgc gag atc gcc	1308
Gly Ser Met Pro Lys Arg Gly Leu Glu Val Ser Lys Cys Glu Ile Ala	
320 325 330 335	
cgg ttc tac aaa ctg cat gag cgc aag tgt gag ccc atc gtc atg act	1356
Arg Phe Tyr Lys Leu His Glu Arg Lys Cys Glu Pro Ile Val Met Thr	
336 341 346 351	
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Val Pro Arg Lys Ser Asp Leu Phe Gln Asp Asp Leu Tyr Pro Asp Thr	
352 357 362 367	
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Ala Gly Pro Glu Ala Ala Leu Glu Ala Glu Glu Trp Val Ser Gly Arg	
368 373 378 383	
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Asp Ala Asp Pro Ile Leu Ile Ser Leu Arg Glu Ala Tyr Val Pro Ser	
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aag cag cgg gac ctg aag atc agc cgg cgc aac gtg ttg tct gac agc	1548
Lys Gln Arg Asp Leu Lys Ile Ser Arg Arg Asn Val Leu Ser Asp Ser	
400 405 410 415	
cgg ccc gcc atg gcc ccg ggc tcc tcc cac tta ggg gcc ccc gcc tcc	1596
Arg Pro Ala Met Ala Pro Gly Ser Ser His Leu Gly Ala Pro Ala Ser	
416 421 426 431	
aac aac aat gct gct gat gcc acc ccc agc ggc agc ctg gcc aga gcc	1644
Asn Asn Asn Ala Ala Asp Ala Thr Pro Ser Gly Ser Leu Ala Arg Ala	
432 437 442 447	
ggg gag gct ggg aag ctg gag gag gtg atg cag gag ctg cgg gcc ctg	1692
Gly Glu Ala Gly Lys Leu Glu Glu Val Met Gln Glu Leu Arg Ala Leu	
448 453 458 463	
agg gcg ctg tgg agg atg tat acg ccc agg cga gct cct cga cct gtg	1740
Arg Ala Leu Trp Arg Met Tyr Thr Pro Arg Arg Ala Pro Arg Pro Val	
464 469 474 479	
agg gac cat ctc ccc gac cac tgc cca gac ctc tgc tcc ctc ccc aga	1788
Arg Asp His Leu Pro Asp His Cys Pro Asp Leu Cys Ser Leu Pro Arg	

480 485 490 495

gga ggc ggg agg gtg ggc taa at atttttcattc caaataaaaat tctcttttcta 1841

Gly Gly Gly Arg Val Gly *

496 501

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actcc atg cgc tac ctg ctg ccc agc gtc gtg ctc ctg ggc acg gcg 107

Met Arg Tyr Leu Leu Pro Ser Val Val Leu Leu Gly Thr Ala

1 5 10

ccc acc tac gtg ttg gcc tgg ggg gtc tgg cgg ctg ctc tcc gcc ttc 155

Pro Thr Tyr Val Leu Ala Trp Gly Val Trp Arg Leu Leu Ser Ala Phe

15 20 25 30

ctg ccc gcc cgc ttc tac caa gcg ctg gac gac cgg ctc tac tgc gtc 203

Leu Pro Ala Arg Phe Tyr Gln Ala Leu Asp Asp Arg Leu Tyr Cys Val

31 36 41 46

tac cag agc atg gtg ctc ttc ttc ttc gag aat tac acc ggg gtc cag 251

Tyr Gln Ser Met Val Leu Phe Phe Phe Glu Asn Tyr Thr Gly Val Gln

47 52 57 62

ata ttg cta tat gga gat ttg cca aaa aat aaa gaa aat ata ata tat 299

Ile Leu Leu Tyr Gly Asp Leu Pro Lys Asn Lys Glu Asn Ile Ile Tyr

63 68 73 78

tta gca aat cat caa agc aca gtt gac tgg att gtt gct gac atc ttg 347

Leu Ala Asn His Gln Ser Thr Val Asp Trp Ile Val Ala Asp Ile Leu

79 84 89 94

gcc atc agg cag aat gcg cta gga cat gtg cgc tac gtg ctg aaa gaa 395

Ala Ile Arg Gln Asn Ala Leu Gly His Val Arg Tyr Val Leu Lys Glu

95 100 105 110

ggg tta aaa tgg ctg cca ttg tat ggg tgt tac ttt gct cag cat gga 443

Gly Leu Lys Trp Leu Pro Leu Tyr Gly Cys Tyr Phe Ala Gln His Gly

111 116 121 126

gga atc tat gta aag cgc agt gcc aaa ttt aac gag aaa gag atg cga 491

Gly Ile Tyr Val Lys Arg Ser Ala Lys Phe Asn Glu Lys Glu Met Arg

127 132 137 142

aac aag ttg cag agc tac gtg gac gca gga act cca atg tat ctt gtg	539
Asn Lys Leu Gln Ser Tyr Val Asp Ala Gly Thr Pro Met Tyr Leu Val	
143 148 153 158	
att ttt cca gaa ggt aca agg tat aat cca gag caa aca aaa gtc ctt	587
Ile Phe Pro Glu Gly Thr Arg Tyr Asn Pro Glu Gln Thr Lys Val Leu	
159 164 169 174	
tca gct agt cag gca ttt gct gcc caa cgt ggc ctt gca gta tta aaa	635
Ser Ala Ser Gln Ala Phe Ala Ala Gln Arg Gly Leu Ala Val Leu Lys	
175 180 185 190	
cat gtg cta aca cca cga ata aag gca act cac gtt gct ttt gat tgc	683
His Val Leu Thr Pro Arg Ile Lys Ala Thr His Val Ala Phe Asp Cys	
191 196 201 206	
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Met Lys Asn Tyr Leu Asp Ala Ile Tyr Asp Val Thr Val Val Tyr Glu	
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Gly Lys Asp Asp Gly Gly Gln Arg Arg Glu Ser Pro Thr Met Thr Glu	
223 228 233 238	
ttt ctc tgc aaa gaa tgt cca aaa att cat att cac att gat cgt atc	827
Phe Leu Cys Lys Glu Cys Pro Lys Ile His Ile His Ile Asp Arg Ile	
239 244 249 254	
gac aaa aaa gat gtc cca gaa gaa caa gaa cat atg aga aga tgg ctg	875
Asp Lys Lys Asp Val Pro Glu Glu Gln Glu His Met Arg Arg Trp Leu	
255 260 265 270	
cat gaa cgt ttc gaa atc aaa gat aag atg ctt ata gaa ttt tat gag	923
His Glu Arg Phe Glu Ile Lys Asp Lys Met Leu Ile Glu Phe Tyr Glu	
271 276 281 286	
tca cca gat cca aaa aaa aaa aaa aga ttt cct ggg aaa agt gtt aat	971
Ser Pro Asp Pro Lys Lys Lys Lys Arg Phe Pro Gly Lys Ser Val Asn	
287 292 297 302	
tcc aaa tta agt atc aag aag act tta cca tca atg ttg atc tta agt	1019
Ser Lys Leu Ser Ile Lys Lys Thr Leu Pro Ser Met Leu Ile Leu Ser	
303 308 313 318	
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Gly Leu Thr Ala Gly Met Leu Met Thr Asp Ala Gly Arg Lys Leu Tyr	
319 324 329 334	
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Val Asn Thr Trp Ile Tyr Gly Thr Leu Leu Gly Cys Leu Trp Val Thr	
335 340 345 350	
att aaa gca tag aca agtagctgtc tccagacagt gggatgtgct acattgtcta	1170
Ile Lys Ala *	
351	


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ctttctaaga attaaacaca agcttttctc ccttattgat tagttgctga agtaaaggaa 240
ccctgcagcc ttccc atg cta tct gtt gac atg gaa aac aag gaa aat ggc 291
          Met Leu Ser Val Asp Met Glu Asn Lys Glu Asn Gly
              1             5             10

tct gtc ggt gta aaa aat tcc atg gaa aat ggg aga cca cct gat cct 339
Ser Val Gly Val Lys Asn Ser Met Glu Asn Gly Arg Pro Pro Asp Pro
 13             18             23             28

gca gac tgg gcc gtg atg gat gtc gtc aat tat ttc cga acc gtg gga 387
Ala Asp Trp Ala Val Met Asp Val Val Asn Tyr Phe Arg Thr Val Gly
 29             34             39             44

ttt gag gag caa gct agt gct ttt cag gaa cag gaa att gat gga aaa 435
Phe Glu Glu Gln Ala Ser Ala Phe Gln Glu Gln Glu Ile/Asp Gly Lys
 45             50             55             60

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 Met Glu Thr His Val Lys Thr
 1 5

aag cat gcc aat ctt tta gac att cca ttg gaa gac tgt gat caa cca 159
 Lys His Ala Asn Leu Leu Asp Ile Pro Leu Glu Asp Cys Asp Gln Pro
 8 13 18 23

ctc tat gat tgt cct atg tgt ggg ctc ata tgt aca aat tac cat att 207
 Leu Tyr Asp Cys Pro Met Cys Gly Leu Ile Cys Thr Asn Tyr His Ile
 24 29 34 39

ctt cag gaa cat gtt gac ttg cat ttg gaa gaa aac agc ttt cag caa 255
 Leu Gln Glu His Val Asp Leu His Leu Glu Glu Asn Ser Phe Gln Gln
 40 45 50 55

ggc atg gat aga gtc cag tgt tct ggt gat cta caa ttg gct cac cag 303
 Gly Met Asp Arg Val Gln Cys Ser Gly Asp Leu Gln Leu Ala His Gln
 56 61 66 71

ctt cag caa gaa gaa gac aga aag agg aga tct gaa gaa tca aga caa 351
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 72 77 82 87

gaa ata gaa gaa ttt cag aag ctg cag aga caa tat ggt tta gat aat 399
 Glu Ile Glu Glu Phe Gln Lys Leu Gln Arg Gln Tyr Gly Leu Asp Asn
 88 93 98 103

tct gga gga tac aaa caa caa caa cta cga aat atg gag ata gaa gta 447
 Ser Gly Gly Tyr Lys Gln Gln Gln Leu Arg Asn Met Glu Ile Glu Val
 104 109 114 119

aat agg gga aga atg cct cca tct gaa ttt cat agg aga aaa gct gat 495
 Asn Arg Gly Arg Met Pro Pro Ser Glu Phe His Arg Arg Lys Ala Asp
 120 125 130 135

atg atg gaa tca tta gct ctt ggt ttt gac gat gga aaa aca aaa act 543
 Met Met Glu Ser Leu Ala Leu Gly Phe Asp Asp Gly Lys Thr Lys Thr
 136 141 146 151

tcc gga att att gaa gca ctt cat agg tat tat cag aat gct gcc aca 591
 Ser Gly Ile Ile Glu Ala Leu His Arg Tyr Tyr Gln Asn Ala Ala Thr
 152 157 162 167

gat gtg aga cgg gtg tgg ctt tct tca gtg gtg gat cac ttt cat tca 639
 Asp Val Arg Arg Val Trp Leu Ser Ser Val Val Asp His Phe His Ser
 168 173 178 183

tct tta ggc gac aaa ggt tgg ggt tgt ggt tac aga aat ttc caa atg 687
 Ser Leu Gly Asp Lys Gly Trp Gly Cys Gly Tyr Arg Asn Phe Gln Met
 184 189 194 199

cta ctt tca tca tta tta caa aat gat gct tac aac gat tgc tta aaa 735

Leu	Leu	Ser	Ser	Leu	Leu	Gln	Asn	Asp	Ala	Tyr	Asn	Asp	Cys	Leu	Lys	
200					205					210					215	
ggt	atg	ttg	att	cct	tgc	att	cca	aaa	att	caa	tct	atg	att	gaa	gat	783
Gly	Met	Leu	Ile	Pro	Cys	Ile	Pro	Lys	Ile	Gln	Ser	Met	Ile	Glu	Asp	
216					221					226					231	
gca	tgg	aag	gaa	ggt	ttt	gat	cct	cag	ggg	gcc	tct	caa	ctt	att	atc	831
Ala	Trp	Lys	Glu	Gly	Phe	Asp	Pro	Gln	Gly	Ala	Ser	Gln	Leu	Ile	Ile	
232					237					242					247	
agg	tta	cag	gga	aca	aag	gcc	tgg	att	gga	gca	tgt	gaa	gta	tat	ata	879
Arg	Leu	Gln	Gly	Thr	Lys	Ala	Trp	Ile	Gly	Ala	Cys	Glu	Val	Tyr	Ile	
248					253					258					263	
ctc	ctg	acc	tct	cta	agg	ggt	tag	tgtcttattg	ttggattttc	actg						927
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atg cta acg cta gca agt aaa ctg aag cgt gac gat ggt ctc aaa ggg																167
Met Leu Thr Leu Ala Ser Lys Leu Lys Arg Asp Asp Gly Leu Lys Gly																
1 5 10 15																
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Ser Arg Thr Ala Ala Thr Ala Ser Asp Ser Thr Arg Arg Val Ser Val																
17 22 27 32																
aga gac aaa ttg ctt gtt aaa gag gtt gca gaa ctt gaa gct aat tta																263
Arg Asp Lys Leu Leu Val Lys Glu Val Ala Glu Leu Glu Ala Asn Leu																
33 38 43 48																
cct tgt aca tgt aaa gta cat ttt cct gat cca aac aag ctt cat tgt																311
Pro Cys Thr Cys Lys Val His Phe Pro Asp Pro Asn Lys Leu His Cys																
49 54 59 64																
ttt cag cta aca gta acc cca gcc tcc caa agt gaa atg cct gac caa																359
Phe Gln Leu Thr Val Thr Pro Ala Ser Gln Ser Glu Met Pro Asp Gln																
65 70 75 80																
gat ctg gca ccc caa cat cac aga gac agg gga aat atg tct gag ttt																407

Asp	Leu	Ala	Pro	Gln	His	His	Arg	Asp	Arg	Gly	Asn	Met	Ser	Glu	Phe	
81					86					91					96	

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 Ile Glu Arg Thr Phe Asn *
 97 102

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 ccatgtctga ccaggacgtt tggaagatca tatccatgcc agaggctctt gtgaggagat 240
 gagttggtta agagagaggc tggg atg aag atg ctg cca gga gtg ggc gtg 291
 Met Lys Met Leu Pro Gly Val Gly Val
 1 5

ttt ggg act ggc agc tcc gcc cga gtt ctg gtc cca ctg ctg agg gca 339
 Phe Gly Thr Gly Ser Ser Ala Arg Val Leu Val Pro Leu Leu Arg Ala
 10 15 20 25

gaa ggg ttc act gtt gag gcc ctg tgg ggg aag act gag gag gag gcg 387
 Glu Gly Phe Thr Val Glu Ala Leu Trp Gly Lys Thr Glu Glu Glu Ala
 26 31 36 41

aag cag ctt gct gag gag atg aac atc gcc ttc tac acc/agc cgg act 435
 Lys Gln Leu Ala Glu Glu Met Asn Ile Ala Phe Tyr Thr Ser Arg Thr
 42 47 52 57

gat	gac	atc	ttg	ctg	cat	caa	gat	gtg	gat	ctg	gtg	tgc	atc	agc	atc	483
Asp	Asp	Ile	Leu	Leu	His	Gln	Asp	Val	Asp	Leu	Val	Cys	Ile	Ser	Ile	
58					63					68					73	
ccc	cct	cca	ctc	acc	cgg	cag	ata	tcc	gtg	aag	gct	cta	ggg	att	ggg	531
Pro	Pro	Pro	Leu	Thr	Arg	Gln	Ile	Ser	Val	Lys	Ala	Leu	Gly	Ile	Gly	
74					79					84					89	
aag	aat	gtg	gtt	tgc	gag	aag	gca	gca	aca	tgc	gtg	gat	gcc	ttc	cgg	579
Lys	Asn	Val	Val	Cys	Glu	Lys	Ala	Ala	Thr	Ser	Val	Asp	Ala	Phe	Arg	
90					95					100					105	
atg	gtg	aca	gcc	tgc	cgc	tac	tac	ccg	cag	ctc	atg	agc	ctg	gta	ggg	627
Met	Val	Thr	Ala	Ser	Arg	Tyr	Tyr	Pro	Gln	Leu	Met	Ser	Leu	Val	Gly	
106					111					116					121	
aac	gtg	ctg	cgc	ttc	ctg	cct	gcc	ttc	gtg	cgc	atg	aaa	cag	ctg	att	675
Asn	Val	Leu	Arg	Phe	Leu	Pro	Ala	Phe	Val	Arg	Met	Lys	Gln	Leu	Ile	
122					127					132					137	
tgc	gaa	cac	tat	gtg	gga	gcg	gtg	atg	atc	tgt	gat	gcc	cgc	atc	tac	723
Ser	Glu	His	Tyr	Val	Gly	Ala	Val	Met	Ile	Cys	Asp	Ala	Arg	Ile	Tyr	
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tca	ggc	agc	ctg	ctg	agc	ccc	agc	tat	ggc	tgg	atc	tgt	gat	gag	ctc	771
Ser	Gly	Ser	Leu	Leu	Ser	Pro	Ser	Tyr	Gly	Trp	Ile	Cys	Asp	Glu	Leu	
154					159					164					169	
atg	ggc	ggg	ggg	ggc	ttg	cac	acc	atg	ggg	acc	tac	att	gtg	gac	ctg	819
Met	Gly	Gly	Gly	Gly	Leu	His	Thr	Met	Gly	Thr	Tyr	Ile	Val	Asp	Leu	
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ctg	acc	cac	ctg	acc	ggc	cgg	aga	gcc	gag	aag	gtg	cac	ggg	ctg	ctc	867
Leu	Thr	His	Leu	Thr	Gly	Arg	Arg	Ala	Glu	Lys	Val	His	Gly	Leu	Leu	
186					191					196					201	
aag	aca	ttc	gtg	agg	cag	aac	gct	gcc	atc	cgt	ggc	atc	cgg	cac	gtc	915
Lys	Thr	Phe	Val	Arg	Gln	Asn	Ala	Ala	Ile	Arg	Gly	Ile	Arg	His	Val	
202					207					212					217	
act	agc	gat	gac	ttc	tgt	ttc	ttc	cag	atg	ctc	atg	ggg	ggg	ggg	gtg	963
Thr	Ser	Asp	Asp	Phe	Cys	Phe	Phe	Gln	Met	Leu	Met	Gly	Gly	Gly	Val	
218					223					228					233	
tgt	agc	aca	gtg	aca	ctc	aac	ttc	aac	atg	cca	ggc	gcc	ttt	gtg	cat	1011
Cys	Ser	Thr	Val	Thr	Leu	Asn	Phe	Asn	Met	Pro	Gly	Ala	Phe	Val	His	
234					239					244					249	
gaa	gtc	atg	gtg	gta	ggc	tct	gca	gga	cgc	ctc	gtc	gcc	cgg	gga	gcc	1059
Glu	Val	Met	Val	Val	Gly	Ser	Ala	Gly	Arg	Leu	Val	Ala	Arg	Gly	Ala	
250					255					260					265	
gac	ctc	tat	ggg	cag	aag	aac	tct	gcc	acg	caa	gag	gag	ctg	ctc	ttg	1107
Asp	Leu	Tyr	Gly	Gln	Lys	Asn	Ser	Ala	Thr	Gln	Glu	Glu	Leu	Leu	Leu	
266					271					276					281	

agg gac tcg ctg gca gtg ggc gca gga ctg cct gag cag ggg ccc cag	1155
Arg Asp Ser Leu Ala Val Gly Ala Gly Leu Pro Glu Gln Gly Pro Gln	
282 287 292 297	
gat gtc ccg ctg ctg tac ctg aag ggc atg gtc tac atg gtg cag gcc	1203
Asp Val Pro Leu Leu Tyr Leu Lys Gly Met Val Tyr Met Val Gln Ala	
298 303 308 313	
ttg cgc cag tcc ttc cag ggg cag ggc gac cgc cgc acc tgg gac cgc	1251
Leu Arg Gln Ser Phe Gln Gly Gln Gly Asp Arg Arg Thr Trp Asp Arg	
314 319 324 329	
acc cct gtc tcc atg gcc gcc tcc ttc gag gat ggg ctg tac atg cag	1299
Thr Pro Val Ser Met Ala Ala Ser Phe Glu Asp Gly Leu Tyr Met Gln	
330 335 340 345	
agc gtg gtg gat gcc atc aag agg tcg agc cga tcc ggg gag tgg gag	1347
Ser Val Val Asp Ala Ile Lys Arg Ser Ser Arg Ser Gly Glu Trp Glu	
346 351 356 361	
gct gtg gag gtg ctg acg gag gag ccc gac acc aac cag aac ctg tgt	1395
Ala Val Glu Val Leu Thr Glu Glu Pro Asp Thr Asn Gln Asn Leu Cys	
362 367 372 377	
gag gca ctt cag cgg aac aac cta tga gcctg cacctgggct ccttgccaca	1447
Glu Ala Leu Gln Arg Asn Asn Leu *	
378 383	
gggcagaggg accagggagg ggaacaggag ccagacatga cagggacttg gccctagcag	1507
agacagtgtc tttcatTTaa tgagtctggg tgaagccaga ggtggctctg ggacttcgcc	1567
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tgttggttgg ttatgcttta ggggttttgt tctcggctc gagctcatgg gtgtacatta	180
tcatgctctt cttttgtaga gcagcccgac ggcc atg gag gct gaa gag acg	232
Met Glu Ala Glu Glu Thr	
1	
atg gaa tgc ctt cag gag ttc cct gaa cat cat aaa atg atc ctc gac	280
Met Glu Cys Leu Gln Glu Phe Pro Glu His His Lys Met Ile Leu Asp	
7 12 17 22	
cga ttg aat gaa cag cga gag cag gac cgg ttt act gac atc acc cta	328
Arg Leu Asn Glu Gln Arg Glu Gln Asp Arg Phe Thr Asp Ile Thr Leu	
23 28 33 38	
att gtc gac gga cac cat ttt aag gct cac aag gct gtt ttg gct gct	376
Ile Val Asp Gly His His Phe Lys Ala His Lys Ala Val Leu Ala Ala	
39 44 49 54	
tgt agt aag ttc ttc tac aaa ttc ttt cag gag ttt acc caa gaa cca	424
Cys Ser Lys Phe Phe Tyr Lys Phe Phe Gln Glu Phe Thr Gln Glu Pro	
55 60 65 70	
ttg gtg gag ata gaa ggt gtt agt aaa atg gcc ttt cgc cat tta att	472
Leu Val Glu Ile Glu Gly Val Ser Lys Met Ala Phe Arg His Leu Ile	
71 76 81 86	
gag ttc aca tat aca gca aaa tta atg ata caa gga gaa gaa gaa gcc	520
Glu Phe Thr Tyr Thr Ala Lys Leu Met Ile Gln Gly Glu Glu Glu Ala	
87 92 97 102	
aat gat gta tgg aaa gca gca gag ttt cta caa atg cta gaa gct atc	568
Asn Asp Val Trp Lys Ala Ala Glu Phe Leu Gln Met Leu Glu Ala Ile	
103 108 113 118	
aaa gcc ctt gaa gtc agg aac aaa gaa aac tca gct ccc tta gag gaa	616
Lys Ala Leu Glu Val Arg Asn Lys Glu Asn Ser Ala Pro Leu Glu Glu	
119 124 129 134	
aat acc aca gga aaa aat gag gcc aaa aaa agg aag att gca gaa act	664
Asn Thr Thr Gly Lys Asn Glu Ala Lys Lys Arg Lys Ile Ala Glu Thr	
135 140 145 150	
tca aat gtt atc act gag tca ttg cca tct gca gaa tca gaa cct gtt	712
Ser Asn Val Ile Thr Glu Ser Leu Pro Ser Ala Glu Ser Glu Pro Val	
151 156 161 166	
gaa att gag gta gag att gcc gaa gcc att gaa gtg gaa gat gaa ggc	760

391	396	401	406	
aaa gat cac ttg gta	ata cac act gga gat	aaa ccc aac cat tgt act		1480
Lys Asp His Leu Val	Ile His Thr Gly Asp	Lys Pro Asn His Cys Thr		
407	412	417	422	
tta tgt gat ttg tgg	ttt atg caa gga aat	gaa tta agg agg cat ctc		1528
Leu Cys Asp Leu Trp	Phe Met Gln Gly Asn	Glu Leu Arg Arg His Leu		
423	428	433	438	
agt gat gct cac aat	att tca gag cgt cta	gta acg gaa gaa gtt ctt		1576
Ser Asp Ala His Asn	Ile Ser Glu Arg Leu	Val Thr Glu Glu Val Leu		
439	444	449	454	
tca gta gaa aca cgt	gtg caa act gaa cct	gta aca tca atg act att		1624
Ser Val Glu Thr Arg	Val Gln Thr Glu Pro	Val Thr Ser Met Thr Ile		
455	460	465	470	
ata gaa caa gtt ggg	aag gtg cat gtg cta	cca ttg ctt cag gtt cag		1672
Ile Glu Gln Val Gly	Lys Val His Val Leu	Pro Leu Leu Gln Val Gln		
471	476	481	486	
gtg gat tca gca caa	gtg act gtg gaa caa	gtc cat cca gat ctg ctc		1720
Val Asp Ser Ala Gln	Val Thr Val Glu Gln	Val His Pro Asp Leu Leu		
487	492	497	502	
cag gac agc cag gtg	cac gat tca cac atg	agt gag ctt cca gag cag		1768
Gln Asp Ser Gln Val	His Asp Ser His Met	Ser Glu Leu Pro Glu Gln		
503	508	513	518	
gtc caa gtg agt tat	cta gaa gtg ggc cga	att cag act gaa gaa ggt		1816
Val Gln Val Ser Tyr	Leu Glu Val Gly Arg	Ile Gln Thr Glu Glu Gly		
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act gaa gta cat gta	gag gag ctg cat gtt	gaa cgg gtc aat caa atg		1864
Thr Glu Val His Val	Glu Glu Leu His Val	Glu Arg Val Asn Gln Met		
535	540	545	550	
cca gtg gaa gta caa	act gaa ctt cta gaa	gca gat ttg gac cac gtg		1912
Pro Val Glu Val Gln	Thr Glu Leu Leu Glu	Ala Asp Leu Asp His Val		
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acc cca gaa atc atg	aac caa gag gag aga	gag tct agc caa gca gat		1960
Thr Pro Glu Ile Met	Asn Gln Glu Glu Arg	Glu Ser Ser Gln Ala Asp		
567	572	577	582	
gct gct gag gct gcc	agg gaa gat cac gaa	gat gct gag gat tta gag		2008
Ala Ala Glu Ala Ala	Arg Glu Asp His Glu	Asp Ala Glu Asp Leu Glu		
583	588	593	598	
acc aag cca aca gtg	gat tct gaa gca gaa	aag gca gag aat gag gac		2056
Thr Lys Pro Thr Val	Asp Ser Glu Ala Glu	Lys Ala Glu Asn Glu Asp		
599	604	609	614	
aga aca gct ctg cca	gtt tta gaa tga aatta	cacatgaata tatttttaaa		2108
Arg Thr Ala Leu Pro	Val Leu Glu *			
615	620			

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acattgattc ccctccccct acttattgcc acagaggagg gatcttttcc ataactgaag 2288
gggagttttg agaagtatat ttctggaaac ttaaattggat tatattctta ttatatagtt 2348
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tggttggtgt ttatgcttta ggggttttgt tctcggtctc gagctcatgg gtgtacatta 180
tcattgctctt cttttgtaga gcagcccgac ggcc      atg gag gct gaa gag acg 232
                                   Met Glu Ala Glu Glu Thr
                                   1

atg gaa tgc ctt cag gag ttc cct gaa cat cat aaa atg atc ctc gac 280
Met Glu Cys Leu Gln Glu Phe Pro Glu His His Lys Met Ile Leu Asp
  7              12              17              22

cga ttg aat gaa cag cga gag cag gac cgg ttt act gac atc acc cta 328
Arg Leu Asn Glu Gln Arg Glu Gln Asp Arg Phe Thr Asp Ile Thr Leu
  23              28              33              38

att gtc gac gga cac cat ttt aag gct cac aag gct gtt ttg gct gct 376
Ile Val Asp Gly His His Phe Lys Ala His Lys Ala Val Leu Ala Ala
  39              44              49              54

tgt agt aag ttc ttc tac aaa ttc ttt cag gag ttt acc caa gaa cca 424

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Cys	Ser	Lys	Phe	Phe	Tyr	Lys	Phe	Phe	Gln	Glu	Phe	Thr	Gln	Glu	Pro		
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Leu	Val	Glu	Ile	Glu	Gly	Val	Ser	Lys	Met	Ala	Phe	Arg	His	Leu	Ile		
71					76					81					86		
gag	ttc	aca	tat	aca	gca	aaa	tta	atg	ata	caa	gga	gaa	gaa	gaa	gcc	520	
Glu	Phe	Thr	Tyr	Thr	Ala	Lys	Leu	Met	Ile	Gln	Gly	Glu	Glu	Glu	Ala		
87					92					97					102		
aat	gat	gta	tgg	aaa	gca	gca	gag	ttt	cta	caa	atg	cta	gaa	gct	atc	568	
Asn	Asp	Val	Trp	Lys	Ala	Ala	Glu	Phe	Leu	Gln	Met	Leu	Glu	Ala	Ile		
103					108					113					118		
aaa	gcc	ctt	gaa	gtc	agg	aac	aaa	gaa	aac	tca	gct	ccc	tta	gag	gaa	616	
Lys	Ala	Leu	Glu	Val	Arg	Asn	Lys	Glu	Asn	Ser	Ala	Pro	Leu	Glu	Glu		
119					124					129					134		
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Asn	Thr	Thr	Gly	Lys	Asn	Glu	Ala	Lys	Lys	Arg	Lys	Ile	Ala	Glu	Thr		
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Ser	Asn	Val	Ile	Thr	Glu	Ser	Leu	Pro	Ser	Ala	Glu	Ser	Glu	Pro	Val		
151					156					161					166		
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Glu	Ile	Glu	Val	Glu	Ile	Ala	Glu	Ala	Ile	Glu	Val	Glu	Asp	Glu	Gly		
167					172					177					182		
atc	gaa	aca	tta	gag	gaa	gtg	gct	tct	gcc	aag	cag	tcc	gta	aag	tac	808	
Ile	Glu	Thr	Leu	Glu	Glu	Val	Ala	Ser	Ala	Lys	Gln	Ser	Val	Lys	Tyr		
183					188					193					198		
ata	cag	agc	aca	ggt	tcc	tct	gat	gat	tct	gct	cta	gca	ctg	ttg	gca	856	
Ile	Gln	Ser	Thr	Gly	Ser	Ser	Asp	Asp	Ser	Ala	Leu	Ala	Leu	Leu	Ala		
199					204					209					214		
gat	att	acc	agc	aag	tac	cgt	caa	ggt	gac	aga	aaa	ggg	cag	att	aaa	904	
Asp	Ile	Thr	Ser	Lys	Tyr	Arg	Gln	Gly	Asp	Arg	Lys	Gly	Gln	Ile	Lys		
215					220					225					230		
gaa	gat	ggc	tgt	cca	tct	gac	ccc	acg	agc	aaa	cag	gag	cac	atg	aaa	952	
Glu	Asp	Gly	Cys	Pro	Ser	Asp	Pro	Thr	Ser	Lys	Gln	Glu	His	Met	Lys		
231					236					241					246		
tca	cac	tcc	act	gag	agt	ttc	aag	tgt	gaa	ata	tgc	aat	aaa	cga	tat	1000	
Ser	His	Ser	Thr	Glu	Ser	Phe	Lys	Cys	Glu	Ile	Cys	Asn	Lys	Arg	Tyr		
247					252					257					262		
ctt	cga	gag	agc	gca	tgg	aaa	cag	cac	cta	aat	tgt	tac	cac	ctt	gaa	1048	
Leu	Arg	Glu	Ser	Ala	Trp	Lys	Gln	His	Leu	Asn	Cys	Tyr	His	Leu	Glu		
263					268					273					278		
gaa	ggt	gga	gtc	agt	aag	aag	caa	aga	act	ggg	aaa	aaa	att	cat	gta	1096	
Glu	Gly	Gly	Val	Ser	Lys	Lys	Gln	Arg	Thr	Gly	Lys	Lys	Ile	His	Val		

279	284	289	294	
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cat ctt cga aaa cat His Leu Arg Lys His 311	aca ggt gaa aaa cct Thr Gly Glu Lys Pro 316	ttt gaa tgt cca aat tgt Phe Glu Cys Pro Asn Cys 321	1192	
cat gaa cga ttt gct His Glu Arg Phe Ala 327	aga aat agc act ctg Arg Asn Ser Thr Leu 332	aaa tgt cac ctc act gca Lys Cys His Leu Thr Ala 337	1240	
tgc caa act gga gta Cys Gln Thr Gly Val 343	ggg gca aaa aaa gga Gly Ala Lys Lys Gly 348	agg aag aag ctc tac gaa Arg Lys Lys Leu Tyr Glu 353	1288	
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cac ttg gta ata cac His Leu Val Ile His 375	act gga gat aaa ccc Thr Gly Asp Lys Pro 380	aac cat tgt act tta tgt Asn His Cys Thr Leu Cys 385	1384	
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gct cac aat att tca Ala His Asn Ile Ser 407	gag cgt cta gta acg Glu Arg Leu Val Thr 412	gaa gaa gtt ctt tca gta Glu Glu Val Leu Ser Val 417	1480	
gaa aca cgt gtg caa Glu Thr Arg Val Gln 423	act gaa cct gta aca Thr Glu Pro Val Thr 428	tca atg act att ata gaa Ser Met Thr Ile Ile Glu 433	1528	
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gtg agt tat cta gaa Val Ser Tyr Leu Glu 487	gtg ggc cga att cag Val Gly Arg Ile Gln 492	act gaa gaa ggt act gaa Thr Glu Glu Gly Thr Glu 497	1720	
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Glu Val Gln Thr Glu Leu Leu Glu Ala Asp Leu Asp His Val Thr Pro	
519 524 529 534	
gaa atc atg aac caa gag gag aga gag tct agc caa gca gat gct gct	1864
Glu Ile Met Asn Gln Glu Glu Arg Glu Ser Ser Gln Ala Asp Ala Ala	
535 540 545 550	
gag gct gcc agg gaa gat cac gaa gat gct gag gat tta gag acc aag	1912
Glu Ala Ala Arg Glu Asp His Glu Asp Ala Glu Asp Leu Glu Thr Lys	
551 556 561 566	
cca aca gtg gat tct gaa gca gaa aag gca gag aat gag gac aga aca	1960
Pro Thr Val Asp Ser Glu Ala Glu Lys Ala Glu Asn Glu Asp Arg Thr	
567 572 577 582	
gct ctg cca gtt tta gaa tga aa ttacacatga atatattttt aaattttactt	2013
Ala Leu Pro Val Leu Glu *	
583 588	
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gtggacaaaa gttaagctgt ttctgttgt gctgaactgt tgtccgttga aacacattga	2133
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207	212	217	222	
aaa ttg aag atc ctt cca gtt ctt gga ttt cta ggt gga gta ata ttt				899
Lys Leu Lys Ile Leu Pro Val Leu Gly Phe Leu Gly Gly Val Ile Phe				
223	228	233	238	
tcc tgt tca aat tat ttc cat gtt atc ctc cat ggt ggt gtt ggc aag				947
Ser Cys Ser Asn Tyr Phe His Val Ile Leu His Gly Gly Val Gly Lys				
239	244	249	254	
aat gga tcc act ata gca ggc acc agt gtc ttg tca cct gga ctc cac				995
Asn Gly Ser Thr Ile Ala Gly Thr Ser Val Leu Ser Pro Gly Leu His				
255	260	265	270	
ata gga cta att att ata ctg gca ata atg atc tat aaa aag tca gca				1043
Ile Gly Leu Ile Ile Ile Leu Ala Ile Met Ile Tyr Lys Lys Ser Ala				
271	276	281	286	
act gat gtg ttt gaa aag cat cct tgt ctt tat atc cta atg ttt gga				1091
Thr Asp Val Phe Glu Lys His Pro Cys Leu Tyr Ile Leu Met Phe Gly				
287	292	297	302	
tgt gtc ttt gct aaa gtc tca caa aaa tta gtg gta gct cac atg acc				1139
Cys Val Phe Ala Lys Val Ser Gln Lys Leu Val Val Ala His Met Thr				
303	308	313	318	
aaa agt gaa cta tat ctt caa gac act gtc ttt ttg ggg cca ggt ctt				1187
Lys Ser Glu Leu Tyr Leu Gln Asp Thr Val Phe Leu Gly Pro Gly Leu				
319	324	329	334	
ttg ttt tta gac cag tac ttt aat aac ttt ata gac gaa tat gtt gtt				1235
Leu Phe Leu Asp Gln Tyr Phe Asn Asn Phe Ile Asp Glu Tyr Val Val				
335	340	345	350	
cta tgg atg gca atg gtg att tct tca ttt gat atg gtg ata tac ttt				1283
Leu Trp Met Ala Met Val Ile Ser Ser Phe Asp Met Val Ile Tyr Phe				
351	356	361	366	
agt gct ttg tgc ctg caa att tca aga cac ctt cat cta aat ata ttc				1331
Ser Ala Leu Cys Leu Gln Ile Ser Arg His Leu His Leu Asn Ile Phe				
367	372	377	382	
aag act gca tgt cat caa gca cct gaa cag gtt caa gtt ctt tct tca				1379
Lys Thr Ala Cys His Gln Ala Pro Glu Gln Val Gln Val Leu Ser Ser				
383	388	393	398	
aag agt cat cag aat aac atg gat tga agaga cttccgaaca cttgctatct				1431
Lys Ser His Gln Asn Asn Met Asp *				
399	404			
cttgctgctg ctgtttcatg gaaggagata ttaaaccattt gtttaatttt tatttaagt				1491
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 Met Gly Gly Thr
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 5 10 15 20
 acc gtg gtg aag ggc atc cgg ctt tcg gaa aat gtg att gat cga atg 391
 Thr Val Val Lys Gly Ile Arg Leu Ser Glu Asn Val Ile Asp Arg Met
 21 26 31 36
 aag gaa tcc tct cca tct ggt tcg aag tct cag cgg tat tct ggt gct 439
 Lys Glu Ser Ser Pro Ser Gly Ser Lys Ser Gln Arg Tyr Ser Gly Ala
 37 42 47 52
 tat ggt gcc tca gtt tct gat gaa gaa ttg aaa aga aga gta gct gag 487
 Tyr Gly Ala Ser Val Ser Asp Glu Glu Leu Lys Arg Arg Val Ala Glu
 53 58 63 68
 gag ctg gca ttg gag caa gcc aag aaa gaa tcc gaa gat cag aaa cga 535
 Glu Leu Ala Leu Glu Gln Ala Lys Lys Glu Ser Glu Asp Gln Lys Arg
 69 74 79 84
 cta aag caa gcc aaa gag ctg gac cga gag agg gct gct gcc aat gag 583
 Leu Lys Gln Ala Lys Glu Leu Asp Arg Glu Arg Ala Ala Ala Asn Glu
 85 90 95 100
 cag tta acc aga gcc atc ctt cgg gag agg ata tgt agc gag gag gaa 631
 Gln Leu Thr Arg Ala Ile Leu Arg Glu Arg Ile Cys Ser Glu Glu Glu
 101 106 111 116
 cgc gct aag gca aag cac ctg gct agg cag ctg gaa gag aaa gac cga 679
 Arg Ala Lys Ala Lys His Leu Ala Arg Gln Leu Glu Glu Lys Asp Arg

117	122	127	132	
gtg cta aag aag cag gat gca ttc tac aaa gaa cag ctg gct aga ctg				727
Val Leu Lys Lys Gln Asp Ala Phe Tyr Lys Glu Gln Leu Ala Arg Leu				
133	138	143	148	
gag gag agg agc tca gag ttc tac aga gtc acc act gaa caa tat cag				775
Glu Glu Arg Ser Ser Glu Phe Tyr Arg Val Thr Thr Glu Gln Tyr Gln				
149	154	159	164	
aaa gct gct gaa gag gtg gaa gca aag ttc aag cga tat gag tct cat				823
Lys Ala Ala Glu Glu Val Glu Ala Lys Phe Lys Arg Tyr Glu Ser His				
165	170	175	180	
cca gtc tgt gct gat ctg cag gcc aaa att ctt cag tgt tac cgt gag				871
Pro Val Cys Ala Asp Leu Gln Ala Lys Ile Leu Gln Cys Tyr Arg Glu				
181	186	191	196	
aac acc cac cag acc ctc aaa tgc tcc gct ctg gcc acc cag tat atg				919
Asn Thr His Gln Thr Leu Lys Cys Ser Ala Leu Ala Thr Gln Tyr Met				
197	202	207	212	
cac tgt gtc aat cat gcc aaa cag agc atg ctt gag aag gga gga taa				967
His Cys Val Asn His Ala Lys Gln Ser Met Leu Glu Lys Gly Gly *				
213	218	223	228	
aaactttcag aatgagcaaa acaccatcaa cgtaaattcc agagatggaa catttttttt				1027
cctagtgaga aaacaaccca tttgaagaga agaccactaa tgagaagacc actaaagaga				1087
gacatcaaga atggattcag cagaatcatt tcacgttttg aacagcagca gtttgaaggg				1147
ccaaagcctt gatcagggat cagtcattaa aggacactct tgagtattag taaaccctct				1207
tatgatgatt aaaagagaag ggcagccctc tccacctttt ggtactttct attcaacttg				1267
cactgaccat aaaatgtttc tcttctgaac aagccccatc atttggtgaa cctccaccct				1327
aacaaagtag gatgggggttg ggggctaaat taattggagt ggggcgagga gagagccaga				1387
aaacatagat ccgagggcag cagtgtctggg tggagagagc cagaaaacag atctggaggc				1447
agcagtgtctg gatggaattg tctaggctgt ggcatgttgg ttttgtcttt cttttctcct				1507
ttgattatgt aagagctatt tcattataac ttattatggg gattatacag gcaagaagac				1567
aaaaaggaga gaaaatgtac ctcttttact ggaataatgt ttatgattac aagtgagata				1627
aggtattttt atcaatatga aggcaacctt ggctgataaa acctctatag tgaatactcc				1687
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aaaaaa				1753

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (156)..(839)

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 cggctcctagc cagagagaaa ggacatttgc caaca atg aga cac gaa gcg ccc 173
 Met Arg His Glu Ala Pro
 1
 atg cag atg gcc tct gcc caa gat gcc agg tac ggc cag aaa gac tcc 221
 Met Gln Met Ala Ser Ala Gln Asp Ala Arg Tyr Gly Gln Lys Asp Ser
 7 12 17 22
 tct gat cag aac ttt gac tac atg ttc aaa tta ctc atc atc ggc aat 269
 Ser Asp Gln Asn Phe Asp Tyr Met Phe Lys Leu Leu Ile Ile Gly Asn
 23 28 33 38
 agc agt gtg ggg aaa aca tct ttt cta ttc cgt tat gca gat gac tcc 317
 Ser Ser Val Gly Lys Thr Ser Phe Leu Phe Arg Tyr Ala Asp Asp Ser
 39 44 49 54
 ttt aca tct gca ttc gtc agc aca gtt ggg atc gat ttc aaa gta aaa 365
 Phe Thr Ser Ala Phe Val Ser Thr Val Gly Ile Asp Phe Lys Val Lys
 55 60 65 70
 act gta ttc aaa aat gaa aag aga atc aag ctt cag att tgg gac aca 413
 Thr Val Phe Lys Asn Glu Lys Arg Ile Lys Leu Gln Ile Trp Asp Thr
 71 76 81 86
 gca ggc cag gaa aga tac agg act atc acc aca gcc tat tat cgt gga 461
 Ala Gly Gln Glu Arg Tyr Arg Thr Ile Thr Thr Ala Tyr Tyr Arg Gly
 87 92 97 102
 gcc atg ggc ttt att tta atg tat gac att aca aat gaa gaa tcc ttc 509
 Ala Met Gly Phe Ile Leu Met Tyr Asp Ile Thr Asn Glu Glu Ser Phe
 103 108 113 118
 aat gca gta caa gat tgg tca act caa atc aaa aca tac tct tgg gac 557
 Asn Ala Val Gln Asp Trp Ser Thr Gln Ile Lys Thr Tyr Ser Trp Asp
 119 124 129 134
 aat gcc caa gtt att ctg gtt ggg aac aag tgt gac atg gaa gac gag 605
 Asn Ala Gln Val Ile Leu Val Gly Asn Lys Cys Asp Met Glu Asp Glu
 135 140 145 150
 cgg gtc atc tca act gag cga ggt caa cat tta gga gaa cag ctt ggg 653
 Arg Val Ile Ser Thr Glu Arg Gly Gln His Leu Gly Glu Gln Leu Gly
 151 156 161 166

ttt gag ttt ttt gaa aca agt gcc aag gac aac att aat gtc aag cag	701
Phe Glu Phe Phe Glu Thr Ser Ala Lys Asp Asn Ile Asn Val Lys Gln	
167 172 177 182	

aca ttt gag cgc ctt gtg gat atc atc tgc gac aaa atg tca gag agt	749
Thr Phe Glu Arg Leu Val Asp Ile Ile Cys Asp Lys Met Ser Glu Ser	
183 188 193 198	

ttg gag act gat cct gcc atc act gct gca aag cag aac acg aga ctc	797
Leu Glu Thr Asp Pro Ala Ile Thr Ala Ala Lys Gln Asn Thr Arg Leu	
199 204 209 214	

aag gaa act cct cct cca ccg cag ccc aac tgt gcc tgc tag tgtcccc	846
Lys Glu Thr Pro Pro Pro Pro Gln Pro Asn Cys Ala Cys *	
215 220 225	

gtgcacacag gcagctccag ggggctcttg ttgccaacaa acagcatttg taaatgggtct	906
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attagccttc atttatactg cctaacaatt atttgaagga ataaattgat gtcaatggct	966
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cgtacgcatt caattcttgg gagctttcct gtttaatatg tggcaaatat gtgatcttaa	1026
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atttataagg actatccatc tataaacatc tggtacctgc aaa	1069
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<210> 647
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 <213> Homo sapiens

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gcgtccgaag acgccagact tcagacgtct ctctcctcgg tgggcacctc attctaacct	120
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tggcaccccc ttgcacgct tcccctccac cctcctcacc cccgacctcc cagggcagaa	180
--	-----

gggcgagagg gggcagactc t atg agt cac ctc cca ggc ctg gag ttg agg	231
Met Ser His Leu Pro Gly Leu Glu Leu Arg	
1 5	

agg gaa gcg ccg cct ctc ctt ggg ccc ctt ctc tcc ccc ttt ccc ctc	279
Arg Glu Ala Pro Pro Leu Leu Gly Pro Leu Leu Ser Pro Phe Pro Leu	
11 16 21 26	

cct gct ggt tcc tgg cat cgc cag atg ctg cgc agc agt ctc cga ttc	327
Pro Ala Gly Ser Trp His Arg Gln Met Leu Arg Ser Ser Leu Arg Phe	
27 32 37 42	
ccc atc acc aat tcg gct ggg gcg ccc tgc aag gcc gca ggc agg atg	375
Pro Ile Thr Asn Ser Ala Gly Ala Pro Cys Lys Ala Ala Gly Arg Met	
43 48 53 58	
aac att ctg gca ccc gtg cgg agg gat cgc gtc ctg gcg gag ctg ccc	423
Asn Ile Leu Ala Pro Val Arg Arg Asp Arg Val Leu Ala Glu Leu Pro	
59 64 69 74	
cag tgc ctg agg aag gag gcc gct ttg cac ggg cac aaa gac ttc cac	471
Gln Cys Leu Arg Lys Glu Ala Ala Leu His Gly His Lys Asp Phe His	
75 80 85 90	
ccc cgc gtc acc tgc gcc tgc cag gag cac cgg aca ggc acc gtg gga	519
Pro Arg Val Thr Cys Ala Cys Gln Glu His Arg Thr Gly Thr Val Gly	
91 96 101 106	
ttt aag atc tcc aag gtc att gtg gtg ggg gac ctg tcg gtg ggg aag	567
Phe Lys Ile Ser Lys Val Ile Val Val Gly Asp Leu Ser Val Gly Lys	
107 112 117 122	
act tgc ctc att aat agg ttc tgc aaa gac acc ttt gat aag aat tac	615
Thr Cys Leu Ile Asn Arg Phe Cys Lys Asp Thr Phe Asp Lys Asn Tyr	
123 128 133 138	
aag gcc acc att gga gtg gac ttc gag atg gaa cga ttt gag gtg ctg	663
Lys Ala Thr Ile Gly Val Asp Phe Glu Met Glu Arg Phe Glu Val Leu	
139 144 149 154	
ggc att ccc ttc agt ttg cag ctt tgg gat acc gct ggg cag gag agg	711
Gly Ile Pro Phe Ser Leu Gln Leu Trp Asp Thr Ala Gly Gln Glu Arg	
155 160 165 170	
ttc aaa tgc att gca tca acc tac tat aga gga gct caa gcc atc atc	759
Phe Lys Cys Ile Ala Ser Thr Tyr Tyr Arg Gly Ala Gln Ala Ile Ile	
171 176 181 186	
att gtc ttc aac ctg aat gat gtg gca tct ctg gaa cat acc aag cag	807
Ile Val Phe Asn Leu Asn Asp Val Ala Ser Leu Glu His Thr Lys Gln	
187 192 197 202	
tgg ctg gcc gat gcc ctg aag gag aat gac cct tcc agt gtg ctt ctc	855
Trp Leu Ala Asp Ala Leu Lys Glu Asn Asp Pro Ser Ser Val Leu Leu	
203 208 213 218	
ttc ctt gta ggt tcc aag aag gat ctg agt acc cct gct cag tat gcg	903
Phe Leu Val Gly Ser Lys Lys Asp Leu Ser Thr Pro Ala Gln Tyr Ala	
219 224 229 234	
ctg atg gag aaa gac gcc ctc cag gtg gcc cag gag atg aag gct gag	951
Leu Met Glu Lys Asp Ala Leu Gln Val Ala Gln Glu Met Lys Ala Glu	
235 240 245 250	
tac tgg gca gtc tca tct ctc act ggt gag aat gtc cga gaa ttc ttc	999

ctgcggggga cgatttcgtc ggtggtaggc tgctacc atg agg ttg aat cag aac	115
Met Arg Leu Asn Gln Asn	
1	
acc ttg ctg ctg ggg aag aag gtg gtc ctt gta ccc tac acc tcg gag	163
Thr Leu Leu Leu Gly Lys Lys Val Val Leu Val Pro Tyr Thr Ser Glu	
7 12 17 22	
cat gtg ccc agg tac cac gag tgg atg aaa tca gag gag ctg cag cgt	211
His Val Pro Arg Tyr His Glu Trp Met Lys Ser Glu Glu Leu Gln Arg	
23 28 33 38	
ttg aca gcc tcg gag ccg ctg acc ctg gag cag gag tat gcc atg cag	259
Leu Thr Ala Ser Glu Pro Leu Thr Leu Glu Gln Glu Tyr Ala Met Gln	
39 44 49 54	
tgc agc tgg cag gaa gat gca gac aag tgt acc ttc att gtg ctg gat	307
Cys Ser Trp Gln Glu Asp Ala Asp Lys Cys Thr Phe Ile Val Leu Asp	
55 60 65 70	
gcc gag aag tgg cag gcc cag cca ggc gcc acc gaa gag agc tgc atg	355
Ala Glu Lys Trp Gln Ala Gln Pro Gly Ala Thr Glu Glu Ser Cys Met	
71 76 81 86	
gtg gga gat gtg aac ctc ttc ctc aca gat cta gaa gac ctc acc ttg	403
Val Gly Asp Val Asn Leu Phe Leu Thr Asp Leu Glu Asp Leu Thr Leu	
87 92 97 102	
ggg gag atc gag gtc atg att gca gag ccc agc tgc agg ggt aag ggc	451
Gly Glu Ile Glu Val Met Ile Ala Glu Pro Ser Cys Arg Gly Lys Gly	
103 108 113 118	
ctt ggc act gag gcc gtt ctc gcg atg ctg tct tac gga gtg acc acg	499
Leu Gly Thr Glu Ala Val Leu Ala Met Leu Ser Tyr Gly Val Thr Thr	
119 124 129 134	
cta ggt ctg acc aag ttt gag gct aaa att ggg caa gga aat gaa cca	547
Leu Gly Leu Thr Lys Phe Glu Ala Lys Ile Gly Gln Gly Asn Glu Pro	
135 140 145 150	
agc atc cgg atg ttc cag aaa ctt cac ttt gag cag gtg gct acg agc	595
Ser Ile Arg Met Phe Gln Lys Leu His Phe Glu Gln Val Ala Thr Ser	
151 156 161 166	
agt gtt ttt cag gag gtg acc ctc aga ctg aca gtg agt gag tcc gag	643
Ser Val Phe Gln Glu Val Thr Leu Arg Leu Thr Val Ser Glu Ser Glu	
167 172 177 182	
cat cag tgg ctt ctg gag cag acc agc cac gtg gaa gag aag cct tac	691
His Gln Trp Leu Leu Glu Gln Thr Ser His Val Glu Glu Lys Pro Tyr	
183 188 193 198	
aga gat ggg tcg gca gag ccc tgc tga tggct gggccttggtg ggcagccact	743
Arg Asp Gly Ser Ala Glu Pro Cys *	
199 204	

ctgtgtgagc aggggtgttg gccatacac ttcaaagacc agagccctgc actgggagag	803
tgctcctggc ccaggctggg aatcaccttt cgaggccctt cagactctgg cggggcttgc	863
tgtggcctcc ctccagctag tgggtgtggc gagcagactc cagggccagg gccagttccc	923
ttctccccctc ccggccaaac ccagaccag actctaggaa gctggaatgg agggcagggg	983
tccatgggag atgtcgggat gaagggtggg gctggagggtg cagggggacc tggaacatgg	1043
atgggagtgg acaggccttt ctcttagag gccagagggtg ctgccctggc tgggagtga	1103
gctccaggca ctaccagctt tcctgatttt cccgtttggt ccatgtgaag agctaccacg	1163
agccccagcc tcacagtgtc cactcaaggg cagcttggtc ctcttgcct gcagaggcag	1223
gctggtgtga ccctgggaac ttgaccggg aacaacagg ggtccagagt gagtgtggcc	1283
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attagtgtta gatacagctc cttgtggctg gaaaacaccc ctctgctgat aaagctcagg	1403
gggcactgag gaagcagagg ccccttgggg gtgccctcct gaagagagcg tcaggccatc	1463
agctctgtcc ctctggtgct cccacgtctg ttcctcacc tccatctctg ggagcagctg	1523
cacctgactg gccacgcggg ggcagtggag gcacaggctc aggggtggccg ggctacctg	1583
caccctatgg cttacaaagt agagttggcc cagtttcctt ccacctgagg ggagcactct	1643
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cgggcatgct ttctaaacac agccacagga ggctttagg gcattctcca ggtggggaaa	1763
cagtcttaga taagtaagg gacttgccca aggcctccca gcacccttga tcttgagtc	1823
tcacagcaga ctgcatgtga acaactggaa ccgaaaacat gcctcagtat aaaacaaaca	1883
ttataaaacg aaaaaaaaaa aa	1905

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (120) .. (1112)

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atg gct gct gtt gac agt ttc tac ctc ttg tac agg gaa atc gcc agg	167

Met	Ala	Ala	Val	Asp	Ser	Phe	Tyr	Leu	Leu	Tyr	Arg	Glu	Ile	Ala	Arg		
1				5					10					15			
tct	tgc	aat	tgc	tat	atg	gaa	gct	cta	gct	ttg	gtt	gga	gcc	tgg	tat		215
Ser	Cys	Asn	Cys	Tyr	Met	Glu	Ala	Leu	Ala	Leu	Val	Gly	Ala	Trp	Tyr		
17					22					27					32		
acg	gcc	aga	aaa	agc	atc	act	gtc	atc	tgt	gac	ttt	tac	agc	ctg	atc		263
Thr	Ala	Arg	Lys	Ser	Ile	Thr	Val	Ile	Cys	Asp	Phe	Tyr	Ser	Leu	Ile		
33					38					43					48		
agg	ctg	cat	ttt	atc	ccc	cgc	ctg	ggg	agc	aga	gca	gac	ttg	atc	aag		311
Arg	Leu	His	Phe	Ile	Pro	Arg	Leu	Gly	Ser	Arg	Ala	Asp	Leu	Ile	Lys		
49					54					59					64		
cag	tat	gga	aga	tgg	gcc	gtt	gtc	agc	ggg	gca	aca	gat	ggg	att	gga		359
Gln	Tyr	Gly	Arg	Trp	Ala	Val	Val	Ser	Gly	Ala	Thr	Asp	Gly	Ile	Gly		
65					70					75					80		
aaa	gcc	tac	gct	gaa	gag	tta	gca	agc	cga	ggg	ctc	aat	ata	atc	ctg		407
Lys	Ala	Tyr	Ala	Glu	Glu	Leu	Ala	Ser	Arg	Gly	Leu	Asn	Ile	Ile	Leu		
81					86					91					96		
att	agt	cgg	aac	gag	gag	aag	ttg	cag	gtt	gtt	gct	aaa	gac	ata	gcc		455
Ile	Ser	Arg	Asn	Glu	Glu	Lys	Leu	Gln	Val	Val	Ala	Lys	Asp	Ile	Ala		
97					102					107					112		
gac	acg	tac	aaa	gtg	gaa	act	gat	att	ata	gtt	gcg	gac	ttc	agc	agc		503
Asp	Thr	Tyr	Lys	Val	Glu	Thr	Asp	Ile	Ile	Val	Ala	Asp	Phe	Ser	Ser		
113					118					123					128		
ggg	cgt	gag	atc	tac	ctt	cca	att	cga	gaa	gcc	ctg	aag	gac	aaa	gac		551
Gly	Arg	Glu	Ile	Tyr	Leu	Pro	Ile	Arg	Glu	Ala	Leu	Lys	Asp	Lys	Asp		
129					134					139					144		
gtt	ggc	atc	ttg	gta	aat	aac	gtg	ggg	gtg	ttt	tat	ccc	tac	ccg	cag		599
Val	Gly	Ile	Leu	Val	Asn	Asn	Val	Gly	Val	Phe	Tyr	Pro	Tyr	Pro	Gln		
145					150					155					160		
tat	ttc	act	cag	ctg	tcc	gag	gac	aag	ctc	tgg	gac	atc	ata	aat	gtg		647
Tyr	Phe	Thr	Gln	Leu	Ser	Glu	Asp	Lys	Leu	Trp	Asp	Ile	Ile	Asn	Val		
161					166					171					176		
aac	att	gcc	gcc	gct	agt	ttg	atg	gtc	cat	gtt	gtg	tta	ccg	gga	atg		695
Asn	Ile	Ala	Ala	Ala	Ser	Leu	Met	Val	His	Val	Val	Leu	Pro	Gly	Met		
177					182					187					192		
gtg	gag	aga	aag	aaa	ggg	gcc	atc	gtc	acg	atc	tct	tct	ggc	tcc	tgc		743
Val	Glu	Arg	Lys	Lys	Gly	Ala	Ile	Val	Thr	Ile	Ser	Ser	Gly	Ser	Cys		
193					198					203					208		
tgc	aaa	ccc	act	cct	cag	ctg	gct	gca	ttt	tct	gct	tct	aag	gct	tat		791
Cys	Lys	Pro	Thr	Pro	Gln	Leu	Ala	Ala	Phe	Ser	Ala	Ser	Lys	Ala	Tyr		
209					214					219					224		
tta	gac	cac	ttc	agc	aga	gcc	ttg	caa	tat	gaa	tat	gcc	tct	aaa	gga		839
Leu	Asp	His	Phe	Ser	Arg	Ala	Leu	Gln	Tyr	Glu	Tyr	Ala	Ser	Lys	Gly		

225	230	235	240	
atc ttt gta cag agt	cta atc cct ttc tat	gta gcc acc agc atg aca		887
Ile Phe Val Gln Ser	Leu Ile Pro Phe Tyr	Val Ala Thr Ser Met Thr		
241	246	251	256	
gca ccc agc aac ttt	ctg cac agg tgc tgc	tgg ttg gtg cct tgc cca		935
Ala Pro Ser Asn Phe	Leu His Arg Cys Ser	Trp Leu Val Pro Ser Pro		
257	262	267	272	
aaa gtc tat gca cat	cat gct gtt tct act	ctt ggg att tcc aaa agg		983
Lys Val Tyr Ala His	His Ala Val Ser Thr	Leu Gly Ile Ser Lys Arg		
273	278	283	288	
acc aca gga tat tgg	toc cat tct att cag	ttt ctt ttt gca cag tat		1031
Thr Thr Gly Tyr Trp	Ser His Ser Ile Gln	Phe Leu Phe Ala Gln Tyr		
289	294	299	304	
atg cct gaa tgg ctc	tgg gtg tgg gga gca	aat att ctc aac cgt tca		1079
Met Pro Glu Trp Leu	Trp Val Trp Gly Ala	Asn Ile Leu Asn Arg Ser		
305	310	315	320	
cta cgt aag gaa gcc	tta toc tgc aca gcc	tga gtctggat ggccacttga		1130
Leu Arg Lys Glu Ala	Leu Ser Cys Thr Ala	*		
321	326	331		
gaagttttgc caactcctgg	gaacctcgat attctgacat	ttggaaaaac acatttaatt		1190
tatctcctgt gtttcattgc	tgattattca gcatactgtt	gattcgtcat ttgcaaaaca		1250
cacataatac cgtcagagt	ctgtgaaaaa ccttaaggg	gtgtggatgg cacaggatca		1310
ataatgcctg aggetgatt	g acgacatcta catttcagt	g ctttttccct aagctgtttg		1370
aaagttacgc ttttctgtt	g ttctagagcc acagcagtct	aatattgaaa tataatatga		1430
tttgtcaggt cttataattt	cagatgttgt tttttaaggg	aaattgacca tttcactaga		1490
ggagttgtgc tggtttttaa	atgtgcatca agaaagacta	ctgaaaagta ttattttgta		1550
actaagattg ctggtactat	taggaaaaat ctgtgtgtat	tgtatagctc tagctgtttg		1610
actatctgta atgaaaatgc	tgcacttcaa ctggtatttc	attagagaac cgtgtgtgtg		1670
cgtgtgtgtg gtgcctttga	gcaactttat ttatgggttac	catattttta aaaagatttt		1730
ttgtcaggat gacttaacat	ggactcttat agggatttaa	aacaatctag attattcctt		1790
ttcatcctaa ataagcctac	caaatttcat gctgttggtt	tgccatgaat gatattactt		1850
cctacattat atttgtgttt	tttcaaactc gctatggaat	gaacttattc ctagatttgg		1910
atatgtaaga gaaacctgca	gtcatctttt gatttataag	gcaattcttg tggataaata		1970
gtgattttctc agcctctgac	ccattttata actgaaat	tt agcccttttag agcttgttat		2030
atctggtttt cctacgtttt	tctatgtaat attattccat	tcagtagca ttattgatag		2090

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 gatgcactgg ggaaagcggg ggactcttat cgtgggaggg ctcttgatct gtgatttata 180
 gataggcaca gctactcccg ttcgggaacc caacggcaga caggctcctag tgcccatcag 240
 ataccgcggg ccgggactcg gagctgtggg gtgtggggag gcggaggcac caactaagag 300
 cgacctagca tcgcaaagcc gccctcgggg cgctc atg gcg gga cgc ctc ctg 353
 Met Ala Gly Arg Leu Leu
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 gga aag gct tta gcc gcg gtg tct ctc tct ctg gcc ttg gcc tct gtg 401

Gly	Lys	Ala	Leu	Ala	Ala	Val	Ser	Leu	Ser	Leu	Ala	Leu	Ala	Ser	Val		
7					12					17					22		
act	atc	agg	tcc	tcg	cgc	tgc	cgc	ggc	atc	cag	gcg	ttc	aga	aac	tcg	449	
Thr	Ile	Arg	Ser	Ser	Arg	Cys	Arg	Gly	Ile	Gln	Ala	Phe	Arg	Asn	Ser		
23					28					33					38		
ttt	tca	tct	tct	tgg	ttt	cat	ctt	aat	acc	aac	gtc	atg	tct	ggg	tct	497	
Phe	Ser	Ser	Ser	Trp	Phe	His	Leu	Asn	Thr	Asn	Val	Met	Ser	Gly	Ser		
39					44					49					54		
aat	ggg	tcc	aaa	gaa	aat	tct	cac	aat	aag	gct	cgg	acg	tct	cct	tac	545	
Asn	Gly	Ser	Lys	Glu	Asn	Ser	His	Asn	Lys	Ala	Arg	Thr	Ser	Pro	Tyr		
55					60					65					70		
cca	ggg	tca	aaa	gtt	gaa	cga	agc	cag	gtt	cct	aat	gag	aaa	gtg	ggc	593	
Pro	Gly	Ser	Lys	Val	Glu	Arg	Ser	Gln	Val	Pro	Asn	Glu	Lys	Val	Gly		
71					76					81					86		
tgg	ctt	gtt	gag	tgg	caa	gac	tat	aag	cct	gtg	gaa	tac	act	gca	gtc	641	
Trp	Leu	Val	Glu	Trp	Gln	Asp	Tyr	Lys	Pro	Val	Glu	Tyr	Thr	Ala	Val		
87					92					97					102		
tct	gtc	ttg	gct	gga	ccc	agg	tgg	gca	gat	cct	cag	atc	agt	gaa	agt	689	
Ser	Val	Leu	Ala	Gly	Pro	Arg	Trp	Ala	Asp	Pro	Gln	Ile	Ser	Glu	Ser		
103					108					113					118		
aat	ttt	tct	ccc	aag	ttt	aac	gaa	aag	gat	ggg	cat	gtt	gag	aga	aag	737	
Asn	Phe	Ser	Pro	Lys	Phe	Asn	Glu	Lys	Asp	Gly	His	Val	Glu	Arg	Lys		
119					124					129					134		
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Ser	Lys	Asn	Gly	Leu	Tyr	Glu	Ile	Glu	Asn	Gly	Arg	Pro	Arg	Asn	Pro		
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Ala	Gly	Arg	Thr	Gly	Leu	Val	Gly	Arg	Gly	Leu	Leu	Gly	Arg	Trp	Gly		
151					156					161					166		
cca	aat	cac	gct	gca	gat	ccc	att	ata	acc	aga	tgg	aaa	agg	gat	agc	881	
Pro	Asn	His	Ala	Ala	Asp	Pro	Ile	Ile	Thr	Arg	Trp	Lys	Arg	Asp	Ser		
167					172					177					182		
agt	gga	aat	aaa	atc	atg	cat	cct	gtt	tct	ggg	aag	cat	atc	tta	caa	929	
Ser	Gly	Asn	Lys	Ile	Met	His	Pro	Val	Ser	Gly	Lys	His	Ile	Leu	Gln		
183					188					193					198		
ttt	gtt	gca	ata	aaa	agg	aaa	gac	tgt	gga	gaa	tgg	gca	atc	cca	ggg	977	
Phe	Val	Ala	Ile	Lys	Arg	Lys	Asp	Cys	Gly	Glu	Trp	Ala	Ile	Pro	Gly		
199					204					209					214		
ggg	atg	gtg	gat	cca	gga	gag	aag	att	agt	gcc	aca	ctg	aaa	aga	gaa	1025	
Gly	Met	Val	Asp	Pro	Gly	Glu	Lys	Ile	Ser	Ala	Thr	Leu	Lys	Arg	Glu		
215					220					225					230		
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Phe	Gly	Glu	Glu	Ala	Leu	Asn	Ser	Leu	Gln	Lys	Thr	Ser	Ala	Glu	Lys		

231	236	241	246	
aga gaa ata gag gaa aag ttg cac aaa ctc ttc agc caa gac cac cta				1121
Arg Glu Ile Glu Glu Lys Leu His Lys Leu Phe Ser Gln Asp His Leu				
247	252	257	262	
gtg ata tat aag gga tat gtt gat gat cct cga aac act gat aat gca				1169
Val Ile Tyr Lys Gly Tyr Val Asp Asp Pro Arg Asn Thr Asp Asn Ala				
263	268	273	278	
tgg atg gag aca gaa gct gtg aac tac cat gac gaa aca ggt gag ata				1217
Trp Met Glu Thr Glu Ala Val Asn Tyr His Asp Glu Thr Gly Glu Ile				
279	284	289	294	
atg gat aat ctt atg cta gaa gct gga gat gat gct gga aaa gtg aaa				1265
Met Asp Asn Leu Met Leu Glu Ala Gly Asp Asp Ala Gly Lys Val Lys				
295	300	305	310	
tgg gtg gac atc aat gat aaa ctg aag ctt tat gcc agt cac tct caa				1313
Trp Val Asp Ile Asn Asp Lys Leu Lys Leu Tyr Ala Ser His Ser Gln				
311	316	321	326	
ttc atc aaa ctt gtg gct gag aaa cga gat gca cac tgg agc gag gac				1361
Phe Ile Lys Leu Val Ala Glu Lys Arg Asp Ala His Trp Ser Glu Asp				
327	332	337	342	
tct gaa gct gac tgc cat gcg ttg tag ctgat ggtctccgtg taagccaaag				1413
Ser Glu Ala Asp Cys His Ala Leu *				
343	348			
gcccacagag gagcatatac tgaaaagaag gcagtatcac agaatttata ctataaaaag				1473
ggcagggtag gccacttggc ctatttactt tcaaaacaat ttgcatttag agtggttcgc				1533
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gaatataagt aatcatatatt tgtatgtatt cgatttaagc atggcttaaa ttaaatttaa				1653
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Gly Arg His Pro Gly Trp Thr Gly His Val Ser Thr Ser Trp Ser Ile	
226 231 236 241	
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Asn Cys Cys Asp Asp Gly Glu Gly Ser Gln Gln Glu Glu Val Ile Ser	
242 247 252 257	
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Ser Glu Asp Ile Gly Ala Ser Ile Phe Asn Gly Gln Lys Lys Val Leu	
258 263 268 273	
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Tyr Tyr Ala Asp Ala Leu Thr Glu Ile Ala Phe Val Val Pro Ser Pro	
274 279 284 289	
gtg gag tcc tta act gat tca ttg gaa agt aac atc tcg gac caa gat	969
Val Glu Ser Leu Thr Asp Ser Leu Glu Ser Asn Ile Ser Asp Gln Asp	
290 295 300 305	
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Ser Asp Ser Asn Met Asp Leu Met Pro Gly Ile Leu Lys Gln Pro Ser	
306 311 316 321	
ctg aca ctt gag ctt ttc ccc aat cat aca gac aat ctt aat tcc tca	1065
Leu Thr Leu Glu Leu Phe Pro Asn His Thr Asp Asn Leu Asn Ser Ser	
322 327 332 337	
cag agg ctc agt ccc agt tcc aga atg agg aag ctg cct cag ggt cgc	1113
Gln Arg Leu Ser Pro Ser Ser Arg Met Arg Lys Leu Pro Gln Gly Arg	
338 343 348 353	
cct gtt cct ccc ctt gga cct gag aca aga gtt tct gta gtc tgg gtg	1161
Pro Val Pro Pro Leu Gly Pro Glu Thr Arg Val Ser Val Val Trp Val	
354 359 364 369	
gaa cgc tat gat gat ata gaa aac ttt ccc ctc tca gag ctg atg aca	1209
Glu Arg Tyr Asp Asp Ile Glu Asn Phe Pro Leu Ser Glu Leu Met Thr	
370 375 380 385	
gag atc agt act ggt gtg gaa act act gca aat agt agc act tca ctg	1257
Glu Ile Ser Thr Gly Val Glu Thr Thr Ala Asn Ser Ser Thr Ser Leu	
386 391 396 401	
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Arg Ser Thr Thr Leu Glu Lys Glu Val Pro Val Ile Phe Ile His Pro	
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Leu Asn Thr Gly Leu Phe Arg Ile Lys Ile Gln Gly Ala Thr Gly Lys	
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Phe Asn Met Val Ile Pro Leu Val Asp Gly Met Ile Val Ser Arg Arg	
434 439 444 449	

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Ala Leu Gly Phe Leu Val Arg Gln Thr Val Ile Asn Ile Cys Arg Arg	
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Lys Arg Leu Glu Ser Asp Ser Tyr Ser Pro Pro His Val Arg Arg Lys	
466 471 476 481	
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Gln Lys Ile Thr Asp Ile Val Asn Lys Tyr Arg Asn Lys Gln Leu Glu	
482 487 492 497	
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Pro Glu Phe Tyr Thr Ser Leu Phe Gln Glu Val Gly Leu Lys Asn Cys	
498 503 508 513	
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Arg Val Gly Arg Ser Pro Asn Arg Arg Ser Gly His Glu Ala Leu Pro	
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Val Pro Trp Glu Pro Glu Arg Gly Gly Gly Arg Gly Ala Ala Arg Gly	
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Gly Pro His Gly Thr Gly Gly Ala Ala Arg Arg Ala Ala Ala Ala Ala	
49 54 59 64	
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Gly Thr Ala Ala Thr Trp Ala Arg Arg Arg Gly Pro Gly Gly Ala Ala	
65 70 75 80	
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Gly Gly Gly Arg Asp His Trp Ala Arg Thr Glu Gly Ser Ser Leu His	
81 86 91 96	
agc gag cct gag agg gcc ggc ctc ggg cct gcg ccg ggg aca gag agt	336
Ser Glu Pro Glu Arg Ala Gly Leu Gly Pro Ala Pro Gly Thr Glu Ser	
97 102 107 112	
ccg cag gca gaa ttc tgg aca gac gga cag act gag ccc gcg gca gct	384
Pro Gln Ala Glu Phe Trp Thr Asp Gly Gln Thr Glu Pro Ala Ala Ala	
113 118 123 128	
ggc ctt gga gta gag acc gag agg ccc aag caa aag acg gag cca gac	432
Gly Leu Gly Val Glu Thr Glu Arg Pro Lys Gln Lys Thr Glu Pro Asp	
129 134 139 144	
agg tcc agc ctc cgg acg cat cta gaa tgg agc tgg tca gag ctg gag	480
Arg Ser Ser Leu Arg Thr His Leu Glu Trp Ser Trp Ser Glu Leu Glu	
145 150 155 160	

Phe Ser Ser Ala Ser Ser Phe Asp Glu Ser Glu Asp Asp Val Val Ala	385	390	395	400	
ggg ggc gga ggt gcc agc gat ccc gag gac agg tct ggg agc aaa ccc					1248
Gly Gly Gly Gly Ala Ser Asp Pro Glu Asp Arg Ser Gly Ser Lys Pro	401	406	411	416	
tgg aag aag ctg aag aca gtt ctg aag tat tca ccc ttt gtg gtc tcc					1296
Trp Lys Lys Leu Lys Thr Val Leu Lys Tyr Ser Pro Phe Val Val Ser	417	422	427	432	
ttc cga aaa cac tac cct tgg gtc cag ctt tct gga cat gct ggg aac					1344
Phe Arg Lys His Tyr Pro Trp Val Gln Leu Ser Gly His Ala Gly Asn	433	438	443	448	
ttc cag gca gga gag gat ggt cgg att ctg aaa cgt ttc tgt cag tgt					1392
Phe Gln Ala Gly Glu Asp Gly Arg Ile Leu Lys Arg Phe Cys Gln Cys	449	454	459	464	
gag cag cgc agc ctg gag cag ctg atg aaa gac ccg ctg cga cct ttc					1440
Glu Gln Arg Ser Leu Glu Gln Leu Met Lys Asp Pro Leu Arg Pro Phe	465	470	475	480	
gtg cct gcc tac tat ggc atg gtg ctg cag gat ggc cag acc ttc aac					1488
Val Pro Ala Tyr Tyr Gly Met Val Leu Gln Asp Gly Gln Thr Phe Asn	481	486	491	496	
cag atg gaa gac ctc ctg gct gac ttt gag ggc ccc tcc att atg gac					1536
Gln Met Glu Asp Leu Leu Ala Asp Phe Glu Gly Pro Ser Ile Met Asp	497	502	507	512	
tgc aag atg ggc agc agg acc tat ctg gaa gag gag cta gtg aag gca					1584
Cys Lys Met Gly Ser Arg Thr Tyr Leu Glu Glu Glu Leu Val Lys Ala	513	518	523	528	
cgg gaa cgt ccc cgt ccc cgg aag gac atg tat gag aag atg gtg gct					1632
Arg Glu Arg Pro Arg Pro Arg Lys Asp Met Tyr Glu Lys Met Val Ala	529	534	539	544	
gtg gac cct ggg gcc cct acc cct gag gag cat gcc cag ggt gca gtc					1680
Val Asp Pro Gly Ala Pro Thr Pro Glu Glu His Ala Gln Gly Ala Val	545	550	555	560	
acc aag ccc cgc tac atg cag tgg agg gaa acc atg agc tcc acc tct					1728
Thr Lys Pro Arg Tyr Met Gln Trp Arg Glu Thr Met Ser Ser Thr Ser	561	566	571	576	
acc ctg ggc ttc cgg atc gag ggc atc aag aag gca gat ggg acc tgt					1776
Thr Leu Gly Phe Arg Ile Glu Gly Ile Lys Lys Ala Asp Gly Thr Cys	577	582	587	592	
aac acc aac ttc aag aag acg cag gca ctg gag cag gtg aca aaa gtg					1824
Asn Thr Asn Phe Lys Lys Thr Gln Ala Leu Glu Gln Val Thr Lys Val	593	598	603	608	
ctg gag gac ttc gtg gat gga gac cac gtc atc ctg caa aag tac gtg					1872
Leu Glu Asp Phe Val Asp Gly Asp His Val Ile Leu Gln Lys Tyr Val					

609	614	619	624	
gca tgc cta gaa gaa ctt cgt gaa gct ctg gag atc tcc ccc ttc ttc				1920
Ala Cys Leu Glu Glu Leu Arg Glu Ala Leu Glu Ile Ser Pro Phe Phe				
625	630	635	640	
aag acc cac gag gtg gta ggc agc tcc ctc ctc ttc gtg cac gac cac				1968
Lys Thr His Glu Val Val Gly Ser Ser Leu Leu Phe Val His Asp His				
641	646	651	656	
acc ggc ctg gcc aag gtc tgg atg ata gac ttc ggc aag acg gtg gcc				2016
Thr Gly Leu Ala Lys Val Trp Met Ile Asp Phe Gly Lys Thr Val Ala				
657	662	667	672	
ttg ccc gac cac cag acg ctc agc cac agg ctg ccc tgg gct gag ggc				2064
Leu Pro Asp His Gln Thr Leu Ser His Arg Leu Pro Trp Ala Glu Gly				
673	678	683	688	
aac cgt gag gac ggc tac ctc tgg ggc ctg gac aac atg atc tgc ctc				2112
Asn Arg Glu Asp Gly Tyr Leu Trp Gly Leu Asp Asn Met Ile Cys Leu				
689	694	699	704	
ctg cag ggg ctg gca cag agc tga gctgctcagc caccatcagg ttaattggat				2166
Leu Gln Gly Leu Ala Gln Ser *				
705	710			
ggcgccagtc tggctggagg agccctgaga tgccatggga ggccctgaggt tggccacggg				2226
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gcgctgggtg tgtgtcagag gcgcagggtg ggtggggctg ccagccagga ccctggcctg				3126

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 cttaaagctga agctcccaca ctgtcttcca gggctgagga gatgctctcc ttttctactg 3306
 accatcttga tacttattta tacgagaggc agttgctgga cggggtagta ctgggaagca 3366
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 <213> Homo sapiens

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 ttctctcagt cgtgagggag gcgtcgacgg cgtgcggaag tcctgagttg aggccttgcgg 180
 gatcctttcc ggagaaaagcg caggctaaaag ccgcaagggtga ag atg tcc aac tac 234
 Met Ser Asn Tyr
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 gtg aac gac atg tgg ccg ggc tcg ccg cag gag aag gat tcg ccc tcg 282
 Val Asn Asp Met Trp Gly Ser Pro Gln Glu Lys Asp Ser Pro Ser
 5 10 15 20
 acc tcg cgg tcg ggc ggg tcc agc cgg ctg tcg tcg cgg tct agg agc 330
 Thr Ser Arg Ser Gly Gly Ser Ser Arg Leu Ser Ser Arg Ser Arg Ser
 21 26 31 36
 cgc tct ttt tcc aga agc tct cgg tcc cat tcc cgc gtc tcg agc cgg 378
 Arg Ser Phe Ser Arg Ser Ser Arg Ser His Ser Arg Val Ser Ser Arg
 37 42 47 52
 ttt tcg tcc agg agt cgg agg agc aag tcc agg tcc cgt tcc cga agg 426
 Phe Ser Ser Arg Ser Arg Arg Ser Lys Ser Arg Ser Arg Ser Arg Arg
 53 58 63 68
 cgc cac cag cgg aag tac agg cgc tac tcg cgg tca tac tcg cgg agc 474
 Arg His Gln Arg Lys Tyr Arg Arg Tyr Ser Arg Ser Tyr Ser Arg Ser
 69 74 79 84
 cgg tcg cga tcc cgc agc cgc cgt tac cga gag agg cgc tac ggg ttc 522

Arg Ser Arg Ser Arg Ser Arg Arg Tyr Arg Glu Arg Arg Tyr Gly Phe	
85 90 95 100	
acc agg aga tac tac cgg tct cct tcg cgg tac cgg tcc cgg tcc cgt	570
Thr Arg Arg Tyr Tyr Arg Ser Pro Ser Arg Tyr Arg Ser Arg Ser Arg	
101 106 111 116	
agc agg tcg cgc tct cgg gga agg tcg tac tgc gga agg gcg tac gcg	618
Ser Arg Ser Arg Ser Arg Gly Arg Ser Tyr Cys Gly Arg Ala Tyr Ala	
117 122 127 132	
atc gcg cgg gga cag cgc tac tac ggc ttt ggt cgc aca gtg tac ccg	666
Ile Ala Arg Gly Gln Arg Tyr Tyr Gly Phe Gly Arg Thr Val Tyr Pro	
133 138 143 148	
gag gag cac agc aga tgg agg gac aga tcc agg acg agg tcg cgg agc	714
Glu Glu His Ser Arg Trp Arg Asp Arg Ser Arg Thr Arg Ser Arg Ser	
149 154 159 164	
aga acc ccc ttt cgc tta agt gaa aaa ggt ggg tgg gtc att tac ctt	762
Arg Thr Pro Phe Arg Leu Ser Glu Lys Gly Gly Trp Val Ile Tyr Leu	
165 170 175 180	
tcc att tgt ggt aat gta tgg tgg cag tat atg agt agg cta ggg aac	810
Ser Ile Cys Gly Asn Val Trp Trp Gln Tyr Met Ser Arg Leu Gly Asn	
181 186 191 196	
caa cgt tgc tgt gta gtt tca ata tta gtt cct tta gtg ccc gaa atc	858
Gln Arg Cys Cys Val Val Ser Ile Leu Val Pro Leu Val Pro Glu Ile	
197 202 207 212	
ttt ttg gag gaa aga ggg agg aca tta cct gta ttt aag tgg aca gca	906
Phe Leu Glu Glu Arg Gly Arg Thr Leu Pro Val Phe Lys Trp Thr Ala	
213 218 223 228	
ttc tct tta ggg tta aag gtc aac tgg aag tta aat ggc tca gga tgt	954
Phe Ser Leu Gly Leu Lys Val Asn Trp Lys Leu Asn Gly Ser Gly Cys	
229 234 239 244	
agg gaa ctt ttt ttc cta ttg gct gac tgt tct tag tggg tggagccttt	1004
Arg Glu Leu Phe Phe Leu Leu Ala Asp Cys Ser *	
245 250 255	
taaatgttat gattaagtta aaggttctaa gttaacgtga ttgggaagaa caatatcaaa	1064
acacgccttc ttttagttga cattattact gaataaaatt ggattgtcga gtatcctaag	1124
tgacctagga ggccgggccc ggcggctcac ctctgtaatc ccagcacttg gggaggcgga	1184
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cttgaatggt gttttcatct tctttcatct tcaccctgtc tcacgttacg ttatttttat	1409
cctgatgaca gaataggtac tacaggtatt tttactctgg ttttacagtc aaagaaactg	1469
aggcacaggc aggtttgccc aaggtcacat aactgcttaa tagcagggtg gacaggtgaa	1529
gtaactggat gtgtatcagc catgcccttt ccccatgccc ccggcactcc ccatgacagc	1589
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ctagtgccgg gccttgagcg cctttggggc ccgccgctcc gttccagcgc cacgctgggc	180
tccggtctac acagtctcga gcgcagtccc gcgccgcgca ccggctgggt gctgtgagga	240
gggtcgggtga cccctccatt cctttgatcc gccgcgcagt gcgtccccac gcggatccct	300
ggctcgcctc gcgcctgccg gcggatccgt ggtc	352
atg cca acc cag cag ccg	
Met Pro Thr Gln Gln Pro	
1	
gct gcg ccg agt act cgt gcc ccc aaa ccc tcc cgg agt ctc tct ggc	400
Ala Ala Pro Ser Thr Arg Ala Pro Lys Pro Ser Arg Ser Leu Ser Gly	
7 12 17 22	
tca ctt tgt gcc ctg ttt tot gat gca gac tcg gga tcc ggg atg aag	448
Ser Leu Cys Ala Leu Phe Ser Asp Ala Asp Ser Gly Ser Gly Met Lys	
23 28 33 38	
gcg gag ctt ccc cct ggg cct ggg gca gtg ggg agg gaa atg acc aaa	496
Ala Glu Leu Pro Pro Gly Pro Gly Ala Val Gly Arg Glu Met Thr Lys	
39 44 49 54	
gaa gaa aag ctg cag ctt cgg aag gaa aag aaa cag cag aag aag aaa	544

Glu	Glu	Lys	Leu	Gln	Leu	Arg	Lys	Glu	Lys	Lys	Gln	Gln	Lys	Lys	Lys				
55					60					65						70			
cgg	aag	gaa	gaa	aag	ggg	gca	gaa	cca	gag	act	ggc	tct	gct	gta	tct				592
Arg	Lys	Glu	Glu	Lys	Gly	Ala	Glu	Pro	Glu	Thr	Gly	Ser	Ala	Val	Ser				
71					76					81					86				
gca	gcc	caa	tgt	caa	ggc	cca	acc	aga	gaa	ctg	cca	gaa	tcg	ggc	att				640
Ala	Ala	Gln	Cys	Gln	Gly	Pro	Thr	Arg	Glu	Leu	Pro	Glu	Ser	Gly	Ile				
87					92					97					102				
cag	ttg	ggc	act	cct	cgg	gag	aaa	gtt	cca	gct	ggg	cgg	agt	aag	gcc				688
Gln	Leu	Gly	Thr	Pro	Arg	Glu	Lys	Val	Pro	Ala	Gly	Arg	Ser	Lys	Ala				
103					108					113					118				
gaa	ctt	cgg	gct	gag	cgt	cga	gcc	aag	cag	gag	gcc	gag	cgg	gcc	ctg				736
Glu	Leu	Arg	Ala	Glu	Arg	Arg	Ala	Lys	Gln	Glu	Ala	Glu	Arg	Ala	Leu				
119					124					129					134				
aaa	cag	gca	aga	aaa	ggg	gaa	caa	gga	gga	cca	cct	cct	aag	gcc	agc				784
Lys	Gln	Ala	Arg	Lys	Gly	Glu	Gln	Gly	Gly	Pro	Pro	Pro	Lys	Ala	Ser				
135					140					145					150				
ccc	agc	aca	gct	gga	gaa	acc	ccc	tca	gga	gtg	aag	cgt	ctc	cct	gag				832
Pro	Ser	Thr	Ala	Gly	Glu	Thr	Pro	Ser	Gly	Val	Lys	Arg	Leu	Pro	Glu				
151					156					161					166				
tac	cct	cag	gtt	gat	gac	cta	ctt	ctg	aga	agg	ctt	gtt	aaa	aaa	cca				880
Tyr	Pro	Gln	Val	Asp	Asp	Leu	Leu	Leu	Arg	Arg	Leu	Val	Lys	Lys	Pro				
167					172					177					182				
gag	cgt	caa	cag	gtt	cct	aca	cga	aag	gat	tat	gga	tcc	aaa	gtc	agt				928
Glu	Arg	Gln	Gln	Val	Pro	Thr	Arg	Lys	Asp	Tyr	Gly	Ser	Lys	Val	Ser				
183					188					193					198				
ctc	ttc	tct	cac	cta	ccc	cag	tac	agc	aga	caa	aac	tct	ctg	acc	cag				976
Leu	Phe	Ser	His	Leu	Pro	Gln	Tyr	Ser	Arg	Gln	Asn	Ser	Leu	Thr	Gln				
199					204					209					214				
ttt	atg	agc	atc	cca	tcc	tct	gtg	atc	cac	cca	gcc	atg	gtg	cga	ctc				1024
Phe	Met	Ser	Ile	Pro	Ser	Ser	Val	Ile	His	Pro	Ala	Met	Val	Arg	Leu				
215					220					225					230				
ggc	ctg	cag	tac	tcc	cag	ggc	ctg	gtc	agt	ggc	tcc	aat	gcc	cgg	tgt				1072
Gly	Leu	Gln	Tyr	Ser	Gln	Gly	Leu	Val	Ser	Gly	Ser	Asn	Ala	Arg	Cys				
231					236					241					246				
att	gcc	ctg	ctt	cgt	gcc	ttg	cag	cag	gtg	att	cag	gat	tac	aca	aca				1120
Ile	Ala	Leu	Leu	Arg	Ala	Leu	Gln	Gln	Val	Ile	Gln	Asp	Tyr	Thr	Thr				
247					252					257					262				
ccg	cct	aat	gaa	gaa	ctc	tcc	agg	gat	cta	gtg	aat	aaa	cta	aaa	ccc				1168
Pro	Pro	Asn	Glu	Glu	Leu	Ser	Arg	Asp	Leu	Val	Asn	Lys	Leu	Lys	Pro				
263					268					273					278				
tac	atg	agc	ttc	ctg	act	cag	tgc	cgt	ccc	ctg	tca	gcg	agc	atg	cac				1216
Tyr	Met	Ser	Phe	Leu	Thr	Gln	Cys	Arg	Pro	Leu	Ser	Ala	Ser	Met	His				

279	284	289	294	
aac gcc atc aag ttc ctt aac aag gaa atc acc agt gtg ggc agt tcc				1264
Asn Ala Ile Lys Phe	Leu Asn Lys Glu Ile	Thr Ser Val Gly Ser Ser		
295	300	305	310	
aag cgg gaa gag gag gcc aag tca gaa ctt cga gca gcc att gat cgg				1312
Lys Arg Glu Glu Glu Ala Lys Ser Glu Leu	Arg Ala Ala Ile Asp Arg			
311	316	321	326	
tat gtg caa gag aag att gtg cta gca gct cag gca att tca cgc ttt				1360
Tyr Val Gln Glu Lys Ile Val Leu Ala Ala Gln Ala Ile Ser Arg Phe				
327	332	337	342	
gct tac cag aag atc agt aat gga gat gtg atc ctg gta tat gga tgc				1408
Ala Tyr Gln Lys Ile Ser Asn Gly Asp Val Ile Leu Val Tyr Gly Cys				
343	348	353	358	
tca tct ctg gta tca cga att ctt cag gag gct tgg aca gag ggc cgg				1456
Ser Ser Leu Val Ser Arg Ile Leu Gln Glu Ala Trp Thr Glu Gly Arg				
359	364	369	374	
cgg ttt cgg gtg gta gtg gtg gac agc cgg cca tgg ctg gaa gga agg				1504
Arg Phe Arg Val Val Val Val Asp Ser Arg Pro Trp Leu Glu Gly Arg				
375	380	385	390	
cac aca cta cgt tct cta gtc cat gct ggt gtc cca gcc tcc tac ctg				1552
His Thr Leu Arg Ser Leu Val His Ala Gly Val Pro Ala Ser Tyr Leu				
391	396	401	406	
ctg att cct gca gcc tcc tat gtg ctc cca gag gtt tcc aag gtg cta				1600
Leu Ile Pro Ala Ala Ser Tyr Val Leu Pro Glu Val Ser Lys Val Leu				
407	412	417	422	
ttg gga gct cat gca ctc ttg gcc aac ggg tct gtg atg tca cgg gta				1648
Leu Gly Ala His Ala Leu Leu Ala Asn Gly Ser Val Met Ser Arg Val				
423	428	433	438	
ggg aca gca cag tta gcc ctg gtg gct cga gcc cat aat gta cca gtg				1696
Gly Thr Ala Gln Leu Ala Leu Val Ala Arg Ala His Asn Val Pro Val				
439	444	449	454	
ctg gtt tgc tgt gaa aca tac aag ttc tgt gag cgt gtg cag act gat				1744
Leu Val Cys Cys Glu Thr Tyr Lys Phe Cys Glu Arg Val Gln Thr Asp				
455	460	465	470	
gcc ttt gtc tct aat gag cta gat gac cct gat gat ctg caa tgt aag				1792
Ala Phe Val Ser Asn Glu Leu Asp Asp Pro Asp Asp Leu Gln Cys Lys				
471	476	481	486	
cgg gga gaa cat gtt gcg ctg gct aac tgg cag aac cac gca tcc cta				1840
Arg Gly Glu His Val Ala Leu Ala Asn Trp Gln Asn His Ala Ser Leu				
487	492	497	502	
cgg ttg ttg aat cta gtc tat gat gtg act ccc cca gag ctt gtg gat				1888
Arg Leu Leu Asn Leu Val Tyr Asp Val Thr Pro Pro Glu Leu Val Asp				
503	508	513	518	

Leu Ile Arg Asn Thr Cys Glu Ala Val Val Leu Gly Thr Leu His Pro	
97 102 107 112	
cgc acc tcc atc acc gtg gtg ctg cag gtt gtc agc gat gcc ggc tct	502
Arg Thr Ser Ile Thr Val Val Leu Gln Val Val Ser Asp Ala Gly Ser	
113 118 123 128	
ctc ctg gcc tgt tgt ctg aat gcc gcc tgc atg gca ttg gtg gat gca	550
Leu Leu Ala Cys Cys Leu Asn Ala Ala Cys Met Ala Leu Val Asp Ala	
129 134 139 144	
ggg gtg ccc atg cgg gct ctc ttc tgt ggg gtc gcc tgc gcc ctg gac	598
Gly Val Pro Met Arg Ala Leu Phe Cys Gly Val Ala Cys Ala Leu Asp	
145 150 155 160	
tct gat ggg acc ctc gtg ctg gat cct aca tcc aag caa gaa aag gag	646
Ser Asp Gly Thr Leu Val Leu Asp Pro Thr Ser Lys Gln Glu Lys Glu	
161 166 171 176	
gcc cgg gca gtc ctg acc ttt gcc ctg gac agc gtg gaa cgg aag ctg	694
Ala Arg Ala Val Leu Thr Phe Ala Leu Asp Ser Val Glu Arg Lys Leu	
177 182 187 192	
ctg atg tcc agc acc aag ggg ctc tac tca gac act gag ctc cag cag	742
Leu Met Ser Ser Thr Lys Gly Leu Tyr Ser Asp Thr Glu Leu Gln Gln	
193 198 203 208	
tgc ctg gct gcg gcc cag gcc gct tcg caa cac gtc ttc cgt ttc tac	790
Cys Leu Ala Ala Ala Gln Ala Ala Ser Gln His Val Phe Arg Phe Tyr	
209 214 219 224	
cgg gaa tcg ctg cag agg cgt tac tcc aag agc tga ggca agctggggca	840
Arg Glu Ser Leu Gln Arg Arg Tyr Ser Lys Ser *	
225 230 235	
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cctgtgggga ggcccttgcc tgtgacagcc ccagggcctg ggggcacaga tccccccagc	1020
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Met Ala Glu Gly Ser Gly Glu	
1 5	
gtg gtc aca gtg tct gcg acc ggg gct gcc aac ggc ctc aac aat ggg	162
Val Val Thr Val Ser Ala Thr Gly Ala Ala Asn Gly Leu Asn Asn Gly	
8 13 18 23	
gca ggc ggg acc tcg gcg acg acc agc aac ccg ctg tcg cgc aag ctg	210
Ala Gly Gly Thr Ser Ala Thr Thr Ser Asn Pro Leu Ser Arg Lys Leu	
24 29 34 39	
cat aag atc ctg gag acg cgg ctg gac aac gac aag gag atg tta gaa	258
His Lys Ile Leu Glu Thr Arg Leu Asp Asn Asp Lys Glu Met Leu Glu	
40 45 50 55	
gct ctc aag gca ctt tca acc ttt ttt gtt gaa aat agt ctg cgg act	306
Ala Leu Lys Ala Leu Ser Thr Phe Phe Val Glu Asn Ser Leu Arg Thr	
56 61 66 71	
cga aga aat tta cgt gga gat att gaa cgt aaa agt tta gcc atc aat	354
Arg Arg Asn Leu Arg Gly Asp Ile Glu Arg Lys Ser Leu Ala Ile Asn	
72 77 82 87	
gaa gaa ttt gta agc att ttc aag gaa gtg aag gag gaa ctt gaa agc	402
Glu Glu Phe Val Ser Ile Phe Lys Glu Val Lys Glu Glu Leu Glu Ser	
88 93 98 103	
ata agc gaa gat gtt caa gca atg agc aac tgt tgt caa gat atg aca	450
Ile Ser Glu Asp Val Gln Ala Met Ser Asn Cys Cys Gln Asp Met Thr	
104 109 114 119	
agt cgc cta cag gca gca aag gaa cag act caa gat tta ata gtt aaa	498
Ser Arg Leu Gln Ala Ala Lys Glu Gln Thr Gln Asp Leu Ile Val Lys	
120 125 130 135	
acc act aag ctt caa tct gaa agc caa aaa tta gag ata aga gct caa	546
Thr Thr Lys Leu Gln Ser Glu Ser Gln Lys Leu Glu Ile Arg Ala Gln	
136 141 146 151	
gtt gca gat gcc ttc tta tcc aag ttc caa ctg act tct gat gaa atg	594
Val Ala Asp Ala Phe Leu Ser Lys Phe Gln Leu Thr Ser Asp Glu Met	
152 157 162 167	
agt ctt ctt cga ggt aca aga gaa gga ccc att act gag gat ttt ttc	642
Ser Leu Leu Arg Gly Thr Arg Glu Gly Pro Ile Thr Glu Asp Phe Phe	
168 173 178 183	
aag gca ctg gga aga gta aaa cag att cat aat gat gtc aaa gtt ctc	690
Lys Ala Leu Gly Arg Val Lys Gln Ile His Asn Asp Val Lys Val Leu	
184 189 194 199	
ttg cgt aca aat caa caa acg gca ggt tta gaa att atg gaa cag atg	738
Leu Arg Thr Asn Gln Gln Thr Ala Gly Leu Glu Ile Met Glu Gln Met	

200	205	210	215	
gcc tta ctt caa gaa acg gct tat gaa aga ctt tac cga tgg gct caa				786
Ala Leu Leu Gln Glu Thr Ala Tyr Glu Arg Leu Tyr Arg Trp Ala Gln				
216	221	226	231	
agt gaa tgc aga aca ttg aca caa gaa tca tgt gac gta tct cca gta				834
Ser Glu Cys Arg Thr Leu Thr Gln Glu Ser Cys Asp Val Ser Pro Val				
232	237	242	247	
ttg aca cag gca atg gaa gcc ctg cag gac aga cct gtc tta tat aaa				882
Leu Thr Gln Ala Met Glu Ala Leu Gln Asp Arg Pro Val Leu Tyr Lys				
248	253	258	263	
tat acc tta gat gaa ttt gga aca gcc aga aga agt aca gtt gtt cgt				930
Tyr Thr Leu Asp Glu Phe Gly Thr Ala Arg Arg Ser Thr Val Val Arg				
264	269	274	279	
gga ttt att gat gcg ctc aca aga ggg ggc ccc gga ggt aca cct aga				978
Gly Phe Ile Asp Ala Leu Thr Arg Gly Gly Pro Gly Gly Thr Pro Arg				
280	285	290	295	
cca att gaa atg cat tct cat gac cct ttg agg tat gga gat atg ttg				1026
Pro Ile Glu Met His Ser His Asp Pro Leu Arg Tyr Gly Asp Met Leu				
296	301	306	311	
gct tgg ctc cat caa gct act gct tct gaa aag gaa cac ctt gaa gct				1074
Ala Trp Leu His Gln Ala Thr Ala Ser Glu Lys Glu His Leu Glu Ala				
312	317	322	327	
ctc tta aag cat gta act aca caa ggt gtt gaa gaa aat att caa gaa				1122
Leu Leu Lys His Val Thr Thr Gln Gly Val Glu Glu Asn Ile Gln Glu				
328	333	338	343	
gtt gtt ggg cat atc act gaa ggt gtg tgc agg cct cta aag gtt cga				1170
Val Val Gly His Ile Thr Glu Gly Val Cys Arg Pro Leu Lys Val Arg				
344	349	354	359	
att gag caa gta ata gtt gct gaa cct ggg gca gtt tta tta tat aaa				1218
Ile Glu Gln Val Ile Val Ala Glu Pro Gly Ala Val Leu Leu Tyr Lys				
360	365	370	375	
att tct aat ctc ctc aaa ttt tat cac cat aca atc agt ggt att gtt				1266
Ile Ser Asn Leu Leu Lys Phe Tyr His His Thr Ile Ser Gly Ile Val				
376	381	386	391	
gga aat agt gca act gca tta ttg act acc att gaa gaa atg cat ttg				1314
Gly Asn Ser Ala Thr Ala Leu Leu Thr Thr Ile Glu Glu Met His Leu				
392	397	402	407	
cta agc aaa aaa ata ttc ttc aat agc ttg agt ctt cat gca agt aaa				1362
Leu Ser Lys Lys Ile Phe Phe Asn Ser Leu Ser Leu His Ala Ser Lys				
408	413	418	423	
tta atg gac aag gtt gaa ctc cca cca cct gat ctt gga cca agt tct				1410
Leu Met Asp Lys Val Glu Leu Pro Pro Pro Asp Leu Gly Pro Ser Ser				
424	429	434	439	

gca cta aat cag aca ctc atg ttg ctg cgt gaa gtt tta gca tct cac	1458
Ala Leu Asn Gln Thr Leu Met Leu Leu Arg Glu Val Leu Ala Ser His	
440 445 450 455	
gat tct tca gtt gta cca tta gat gct cgt caa gct gat ttt gtg cag	1506
Asp Ser Ser Val Val Pro Leu Asp Ala Arg Gln Ala Asp Phe Val Gln	
456 461 466 471	
gta tta tca tgt gtc ttg gat cct ctc cta cag atg tgt gct gta tca	1554
Val Leu Ser Cys Val Leu Asp Pro Leu Leu Gln Met Cys Ala Val Ser	
472 477 482 487	
gcc agc aat tta ggc aca gct gac atg gcc act ttc atg gtc aat tca	1602
Ala Ser Asn Leu Gly Thr Ala Asp Met Ala Thr Phe Met Val Asn Ser	
488 493 498 503	
cta tat atg atg aag aca aca tta gct cta ttt gaa ttc act gac aga	1650
Leu Tyr Met Met Lys Thr Thr Leu Ala Leu Phe Glu Phe Thr Asp Arg	
504 509 514 519	
cgt ctg gaa atg cta cag ttt cag atc gaa gca cat ttg gac aca ctt	1698
Arg Leu Glu Met Leu Gln Phe Gln Ile Glu Ala His Leu Asp Thr Leu	
520 525 530 535	
ata aat gag caa gcc tct tat gtt tta act agg gta ggc ttg agt tac	1746
Ile Asn Glu Gln Ala Ser Tyr Val Leu Thr Arg Val Gly Leu Ser Tyr	
536 541 546 551	
atc tat aac act gta cag caa cat aaa cct gaa cag ggc tct tta gct	1794
Ile Tyr Asn Thr Val Gln Gln His Lys Pro Glu Gln Gly Ser Leu Ala	
552 557 562 567	
aat atg ccc aac cta gat tct gtg aca ctg aag gct gca atg gtt cag	1842
Asn Met Pro Asn Leu Asp Ser Val Thr Leu Lys Ala Ala Met Val Gln	
568 573 578 583	
ttt gat cgt tat ctg tca gcc cca gac aac cta ttg ata cca cag ctg	1890
Phe Asp Arg Tyr Leu Ser Ala Pro Asp Asn Leu Leu Ile Pro Gln Leu	
584 589 594 599	
aac ttt ctt cta agt gcc aca gtg aaa gag cag atc gta aaa caa tct	1938
Asn Phe Leu Leu Ser Ala Thr Val Lys Glu Gln Ile Val Lys Gln Ser	
600 605 610 615	
aca gaa tta gtc tgc aga gcc tat ggt gaa gtg tat gca gcc gtg atg	1986
Thr Glu Leu Val Cys Arg Ala Tyr Gly Glu Val Tyr Ala Ala Val Met	
616 621 626 631	
aat cca atc aat gaa tac aaa gat cca gag aac att ctt cac cga tcg	2034
Asn Pro Ile Asn Glu Tyr Lys Asp Pro Glu Asn Ile Leu His Arg Ser	
632 637 642 647	
ccg cag caa gtg cag acg ctt ctt tcc tga t tatcttat,ttt cattgtgtta	2085
Pro Gln Gln Val Gln Thr Leu Leu Ser *	
648 653	

gcaaaatatg acctccctaa aacactgaag gttatTTTTT attctttgaa tttttacttt 2145
 ataatttgat agttacagtt ttctttgtat cataagattg taagtccga taattttttt 2205
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 atgacctaat aaatgtctcc ttacctaaag attcatttgc tttcttttaa tatgagtagg 2505
 catacttagt agcttttctg aacctagcct atgtctctgt ccccaaaata gctgccctta 2565
 aagagttggt agcagagaga aaaataacag tgaatgtgct cctggtgtat atggcagtga 2625
 atctcctttc tgttctactt tagcatacta tatatatTTT actgtgtaca ttcttatgca 2685
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 aaaagtaata acataaaaact agtatttgta gaagattatg tgttgatat aacaaattag 3285
 tatttataga atatgaccta tttatctgaa gtttataatt gtttatacct aatacagttc 3345
 tttttggagt aagaatgatt atataatcgt tatccatttg ggtataaatc tgtatTTTTT 3405
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 gagcttaaaa aaaaaaaa 3483

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 <212> DNA
 <213> Homo sapiens
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<221> CDS

<222> (198) .. (971)

<400> 659

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gacctcctgc	tcacatccgt	aaagcccact	gattctttta	ctacactttt	tatgagaaca	180
agacattttc	taggaag	atg gtg gca gaa aaa gag acc ctg agc tta aac				230
		Met Val Ala Glu Lys Glu Thr Leu Ser Leu Asn				
		1	5			
aaa tgc cca gac aag atg ccg aag agg acc aag ctg ctg gca caa cag						278
Lys Cys Pro Asp Lys Met Pro Lys Arg Thr Lys Leu Leu Ala Gln Gln						
12	17	22	27			
ccg ctc ccg gtg cac cag cct cac tct ctg gtt tct gag ggt ttc aca						326
Pro Leu Pro Val His Gln Pro His Ser Leu Val Ser Glu Gly Phe Thr						
28	33	38	43			
gtc aaa gcc atg atg aaa aac tca gtc gtg aga ggc cct cca gct gca						374
Val Lys Ala Met Met Lys Asn Ser Val Val Arg Gly Pro Pro Ala Ala						
44	49	54	59			
ggg gca ttt aaa gaa aga cca acc aag ccc aca gca ttt cga aaa ttc						422
Gly Ala Phe Lys Glu Arg Pro Thr Lys Pro Thr Ala Phe Arg Lys Phe						
60	65	70	75			
tat gag cga ggt gac ttc cca att gcc ctt gag cat gat tcg aaa gga						470
Tyr Glu Arg Gly Asp Phe Pro Ile Ala Leu Glu His Asp Ser Lys Gly						
76	81	86	91			
aac aaa atc gcc tgg aag gta gaa att gag aag ctg gat tac cat cat						518
Asn Lys Ile Ala Trp Lys Val Glu Ile Glu Lys Leu Asp Tyr His His						
92	97	102	107			
tat ctg cct ctg ttt ttt gat ggg ctt tgt gaa atg aca ttt ccc tat						566
Tyr Leu Pro Leu Phe Phe Asp Gly Leu Cys Glu Met Thr Phe Pro Tyr						
108	113	118	123			
gag ttt ttt gct cgg caa gga atc cac gac atg ctg gaa cac ggt ggg						614
Glu Phe Phe Ala Arg Gln Gly Ile His Asp Met Leu Glu His Gly Gly						
124	129	134	139			
aac aag atc cta cct gtc ctt cca cag ctc att atc ccg ata aaa aat						662
Asn Lys Ile Leu Pro Val Leu Pro Gln Leu Ile Ile Pro Ile Lys Asn						
140	145	150	155			
gcc ttg aac ctc cga aac cga cag gtc atc tgt gtc act ctc aag gtc						710
Ala Leu Asn Leu Arg Asn Arg Gln Val Ile Cys Val Thr Leu Lys Val						
156	161	166	171			
ctc cag cat ctg gtt gtg tca gct gag atg gtg ggc aag gcc ttg gtg						758
Leu Gln His Leu Val Val Ser Ala Glu Met Val Gly Lys Ala Leu Val						
172	177	182	187			

cct tat tac cgt caa atc ctc cct gtc ctg aac atc ttt aag aat atg 806
Pro Tyr Tyr Arg Gln Ile Leu Pro Val Leu Asn Ile Phe Lys Asn Met
188 193 198 203

aat gtg aac tcc gga gac ggc att gac tac agc cag cag aag agg gag 854
Asn Val Asn Ser Gly Asp Gly Ile Asp Tyr Ser Gln Gln Lys Arg Glu
204 209 214 219

aac att ggg gac ttg atc cag gag aca ctg gag gcc ttc gag cgc tac 902
Asn Ile Gly Asp Leu Ile Gln Glu Thr Leu Glu Ala Phe Glu Arg Tyr
220 225 230 235

gga gga gaa aat gcc ttt atc aac att aag tac gtg gtc cca acc tac 950
Gly Gly Glu Asn Ala Phe Ile Asn Ile Lys Tyr Val Val Pro Thr Tyr
236 241 246 251

gag tct tgc ttg cta aac taa ca gtggcagcag ctgggacttg aaacctcccg 1003
Glu Ser Cys Leu Leu Asn *
252 257

ttggtgttgg gatcatctgt ctctgttgct tttagcatct cattccttgt gacttccaca 1063

gctttctttt ctacagctgc taaaatagtg gcttatgggc cattggactg ttagccctat 1123

tgagagcaag gctttccaat acataaatag tgtctgtttc ttagattaca atagtgtact 1183

gtgcttattt gttctaagag aagaattgct tctttataca gctccgacag aagcaggagt 1243

ccgagttaaa ccttcagttg tatagacaat aaactataat tttcatatgc aattca 1299

<210> 660
<211> 1091
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (123)..(494)

<400> 660
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tggaggggtg cgtggacctc agctaccccc gcacccacgc ggccctgctg aaagtggcgc 120

aa atg gtc acc ctg ctg att gcc ttc atc tgt gtg cgg agc tcc ctg 167
Met Val Thr Leu Leu Ile Ala Phe Ile Cys Val Arg Ser Ser Leu
1 5 10

tgg acc aac tac agc gcc tac agc tac ttt gaa gtg gtc acc att tgc 215
Trp Thr Asn Tyr Ser Ala Tyr Ser Tyr Phe Glu Val Val Thr Ile Cys
16 21 26 31

gac ttg ata atg atc ctc gcc ttt tac ctg gtc cac ctc ttc cgc ttc 263

Asp	Leu	Ile	Met	Ile	Leu	Ala	Phe	Tyr	Leu	Val	His	Leu	Phe	Arg	Phe	
32					37					42					47	
tac	cgc	gtg	ctc	acc	tgt	atc	agc	tgg	ccc	ctg	tgc	gaa	ctt	ctg	cac	311
Tyr	Arg	Val	Leu	Thr	Cys	Ile	Ser	Trp	Pro	Leu	Ser	Glu	Leu	Leu	His	
48					53					58					63	
tat	tta	atc	ggc	acc	ctg	ctc	ctc	ctc	atc	gcc	tcc	att	gtg	gca	gct	359
Tyr	Leu	Ile	Gly	Thr	Leu	Leu	Leu	Leu	Ile	Ala	Ser	Ile	Val	Ala	Ala	
64					69					74					79	
tcc	aag	agt	tac	aac	cag	agc	gga	ctg	gta	gcc	gga	gcg	atc	ttt	ggc	407
Ser	Lys	Ser	Tyr	Asn	Gln	Ser	Gly	Leu	Val	Ala	Gly	Ala	Ile	Phe	Gly	
80					85					90					95	
ttc	atg	gcc	acc	ttc	ctc	tgc	atg	gca	agc	ata	tgg	ctg	tcc	tat	aag	455
Phe	Met	Ala	Thr	Phe	Leu	Cys	Met	Ala	Ser	Ile	Trp	Leu	Ser	Tyr	Lys	
96					101					106					111	
atc	tgc	tgt	gta	acc	cag	tcc	aca	gat	gca	gcc	gtc	tga	tgaggccaca			504
Ile	Ser	Cys	Val	Thr	Gln	Ser	Thr	Asp	Ala	Ala	Val	*				
112					117					122						
acc	cct	agg	c	cct	cagg	ag	ctt	gcag	ag	agg	agc	gt	act	ccagg	cgagg	564
gg	acc	tg	tgt	tc	ctgt	gcca	aag	tc	ctgt	gc	agg	ctg	gtg	gc	acc	624
cct	ctt	ctc	tg	ct	ctcc	cagg	aag	cc	agc	tc	cct	gag	ctc	cc	tg	684
cct	cc	agc	cct	tcc	ggg	gaga	aca	tc	ccct	cc	catt	ct	ggga	aag	gaa	744
aa	atg	tttt	c	tg	cctt	ctg	ctt	ctaga	aac	cac	ct	cag	gt	act	gat	804
ac	ag	ctga	ag	ggg	ttt	gtga	ata	ct	ccc	gc	ctaa	at	ccct	tct	act	864
ag	tga	agt	gc	ctta	agaa	ac	aa	gccc	ctgt	ccta	at	ttat	ctag	ctt	gtc	924
tag	agata	acc	ct	cttt	ctc	tg	aag	tga	ggcg	tg	cct	gtaga	aac	act	atgt	984
tccc	caag	ga	gat	ctt	gtgt	ct	cct	ctcca	tct	ctgc	ctt	tg	tacc	agt	gtgc	1044
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<210> 661
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (291) .. (821)

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accgcctttt aaaggacatt gtgactgaga gcaacaagtt tgacctggtg agcttcatcc	120
ccttgttgcg agagaggatt tactccaaca accagtatgc ccggcagttc atcatctcct	180
ggatcctggt tctggagtcg gtgccagaca ttaacctgct ggattacctg ccggagatcc	240
tggatggact cttccagatc ctgggtgaca atggcaaaga gattcgcaaa atg tgt Met Cys 1	296
gag gtt gtt ctt gga gaa ttc tta aaa gaa att aag aag aac ccc tcc Glu Val Val Leu Gly Glu Phe Leu Lys Glu Ile Lys Lys Asn Pro Ser 3 8 13 18	344
agt gtg aag ttt gct gag atg gcc aac atc ctg gtg atc cac tgc cag Ser Val Lys Phe Ala Glu Met Ala Asn Ile Leu Val Ile His Cys Gln 19 24 29 34	392
aca aca gat gac ctc atc cag ctg aca gcc atg tgc tgg atg cgg gag Thr Thr Asp Asp Leu Ile Gln Leu Thr Ala Met Cys Trp Met Arg Glu 35 40 45 50	440
ttc atc cag ctg gcg ggc cgc gtc atg ctg cct tac tcc tcc ggg atc Phe Ile Gln Leu Ala Gly Arg Val Met Leu Pro Tyr Ser Ser Gly Ile 51 56 61 66	488
ctg act gct gtc ttg ccc tgc ttg gcc tac gat gac cgc aag aaa agc Leu Thr Ala Val Leu Pro Cys Leu Ala Tyr Asp Asp Arg Lys Lys Ser 67 72 77 82	536
atc aaa gaa gtg gcc aac gtg tgc aac cag agc ctg atg aag ctg gtc Ile Lys Glu Val Ala Asn Val Cys Asn Glh Ser Leu Met Lys Leu Val 83 88 93 98	584
acc ccc gag gac gac gag ctg gat gag ctg aga cct ggg cag agg cag Thr Pro Glu Asp Asp Glu Leu Asp Glu Leu Arg Pro Gly Gln Arg Gln 99 104 109 114	632
gca gag ccc acc cct gac gat gcc ctg cca aag cag gag ggc aca gcc Ala Glu Pro Thr Pro Asp Asp Ala Leu Pro Lys Gln Glu Gly Thr Ala 115 120 125 130	680
agt ggg tgc act gag gcg cac gac ttc cgt gac atc cct cca atg atg Ser Gly Cys Thr Glu Ala His Asp Phe Arg Asp Ile Pro Pro Met Met 131 136 141 146	728
cgc aac tcc cta ctc gtg aga aaa cgt gag acc aac cca aac ggg gag Arg Asn Ser Leu Leu Val Arg Lys Arg Glu Thr Asn Pro Asn Gly Glu 147 152 157 162	776
aca ctc tgc aga gtg acc agc gct tca aaa gtg tca agt tta tga aag Thr Leu Cys Arg Val Thr Ser Ala Ser Lys Val Ser Ser Leu * 163 168 173	824
acacacagat tgaggggctg caacagattg gaggagacaa agaagacagt ttagctaaat	884

gcagtgtgag atcctggaac aaaaggccag gaatggaaaa actcgtgatg ttcaaattag 944
 ggtaatcatt tagttaatgg tagtgtatcg aagttaacct tctgggtttg atcattgaac 1004
 tatggagccg ggcattggtg ctcacgcctg taatcccagc actttgggag gctgaggtgg 1064
 gtggatcact tgagcccagg agcttgtaac cagcctgggt aacacgacaa aaccccatct 1124
 g 1125

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 cccgtagcgc agggcagcct ttaaccttta gcccagtg ggcgcagcca ctcagatcgc 180
 ttcttgttgg t atg tgt agc ggc agt ggc cgc cgg cgg agc agt ctg agc 230
 Met Cys Ser Gly Ser Gly Arg Arg Arg Ser Ser Leu Ser
 1 5 10
 ccg acg atg agg ccg ggg acg gga gct gag cgt gga ggc ctc atg atg 278
 Pro Thr Met Arg Pro Gly Thr Gly Ala Glu Arg Gly Gly Leu Met Met
 14 19 24 29
 ggg cac cct ggc atg cat tat gcc cca atg gga atg cac cct atg ggt 326
 Gly His Pro Gly Met His Tyr Ala Pro Met Gly Met His Pro Met Gly
 30 35 40 45
 cag aga gcg aat atg cct cct gta cct cat gga atg atg ccg cag atg 374
 Gln Arg Ala Asn Met Pro Pro Val Pro His Gly Met Met Pro Gln Met
 46 51 56 61
 atg ccc cct atg gga ggg cca cca atg gga caa atg cct gga atg atg 422
 Met Pro Pro Met Gly Gly Pro Pro Met Gly Gln Met Pro Gly Met Met
 62 67 72 77
 tcg tca gta atg cct gga atg atg atg tct cat atg tct cag gct tcc 470
 Ser Ser Val Met Pro Gly Met Met Met Ser His Met Ser Gln Ala Ser
 78 83 88 93
 atg cag cct gcc tta ccg cca gga gta aat agt atg gat gta gca gca 518
 Met Gln Pro Ala Leu Pro Pro Gly Val Asn Ser Met Asp Val Ala Ala
 94 99 104 109

<210> 663
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 <212> DNA
 <213> Homo sapiens

 <220>
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 <222> (118)..(702)

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 atg ccg tcg tcc ccg ctg cgg gtg gcg gtg gtg tgc tcg agc aac cag 165
 Met Pro Ser Ser Pro Leu Arg Val Ala Val Val Cys Ser Ser Asn Gln
 1 5 10 15

 aac cgg agc atg gag gcg cac aac atc ctc agc aaa cgg gga ttc agc 213
 Asn Arg Ser Met Glu Ala His Asn Ile Leu Ser Lys Arg Gly Phe Ser
 17 22 27 32

 gtc cga tcc ttt gga aca ggg act cac gtg aag ctt cca gga cca gct 261
 Val Arg Ser Phe Gly Thr Gly Thr His Val Lys Leu Pro Gly Pro Ala
 33 38 43 48

 ccc gac aag ccc aat gtt tat gat ttc aaa acc aca tat gac cag atg 309
 Pro Asp Lys Pro Asn Val Tyr Asp Phe Lys Thr Thr Tyr Asp Gln Met
 49 54 59 64

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 65 70 75 80

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 Ile Leu His Met Leu Asp Arg Asn Lys Arg Ile Lys Pro Arg Pro Glu
 81 86 91 96

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 Arg Phe Gln Asn Cys Lys Asp Leu Phe Asp Leu Ile Leu Thr Cys Glu
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 Glu Thr Cys Gln Pro Val His Val Val Asn Val Asp Ile Gln Asp Asn
 129 134 139 144

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Val Thr Ala Val Val Gln Arg Val Glu Ile His Lys Leu Arg Gln Gly	
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Glu Asn Leu Ile Leu Gly Phe Ser Ile Gly Gly Gly Ile Asp Gln Asp	
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Pro Ser Gln Asn Pro Phe Ser Glu Asp Lys Thr Asp Lys Gly Ile Tyr	
41 46 51 56	
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Val Thr Arg Val Ser Glu Gly Gly Pro Ala Glu Ile Ala Gly Leu Gln	
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Ile Gly Asp Lys Ile Met Gln Val Asn Gly Trp Asp Met Thr Met Val	
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Thr His Asp Gln Ala Arg Lys Arg Leu Thr Lys Arg Ser Glu Glu Val	
89 94 99 104	
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Val Arg Leu Leu Val Thr Arg Gln Ser Leu Gln Lys Ala Val Gln Gln	
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Ser Met Leu Ser *	
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2 7 12 17

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Met Gly Leu Gly Pro Glu Ser Arg Ile His Leu Leu Arg Asn Leu Leu
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Thr Gly Leu Val Arg His Glu Arg Ile Glu Ala Pro Trp Ala Arg Val
34 39 44 49

gac gaa atg agg ggc tac gcg gag aag ctc atc gac tat ggg aag ctg 247
Asp Glu Met Arg Gly Tyr Ala Glu Lys Leu Ile Asp Tyr Gly Lys Leu
50 55 60 65

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Gly Asp Thr Asn Glu Arg Ala Met Arg Met Ala Asp Phe Trp Leu Thr
66 71 76 81

gag aag gat ttg atc cca aag ctg ttt caa gta ctg gcc cct cgg tac 343
Glu Lys Asp Leu Ile Pro Lys Leu Phe Gln Val Leu Ala Pro Arg Tyr
82 87 92 97

aaa gat caa act ggg ggc tac aca aga atg ctg cag atc cca aat cgg 391
Lys Asp Gln Thr Gly Gly Tyr Thr Arg Met Leu Gln Ile Pro Asn Arg
98 103 108 113

agt ttg gat cgg gcc aag atg gca gtg atc gag tat aaa ggg aat tgc 439
Ser Leu Asp Arg Ala Lys Met Ala Val Ile Glu Tyr Lys Gly Asn Cys
114 119 124 129

ctc cca ccc ctg cct ctg cct cgc aga gac agc cac ctt aca ctc cta	487
Leu Pro Pro Leu Pro Leu Pro Arg Arg Asp Ser His Leu Thr Leu Leu	
130 135 140 145	

aac cag ctg ctg cag ggt ttg cgg cag gac ctc agg caa agc cag gaa	535
Asn Gln Leu Leu Gln Gly Leu Arg Gln Asp Leu Arg Gln Ser Gln Glu	
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Ala Ser Asn His Ser Ser His Thr Ala Gln Thr Pro Gly Ile *	
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Leu Ser Val Gln Pro Asp Thr Lys Pro Lys Gly Cys Ala Gly Cys Asn	
2 7 12 17	

cga aag atc aag gac cgg tat ctt cta aag gca ctg gac aaa tac tgg	272
Arg Lys Ile Lys Asp Arg Tyr Leu Leu Lys Ala Leu Asp Lys Tyr Trp	
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His Glu Asp Cys Leu Lys Cys Ala Cys Cys Asp Cys Arg Leu Gly Glu	
34 39 44 49	

gtg ggc tcc acc ctg tac act aaa gct aat ctt atc ctt tgt cgc aga	368
Val Gly Ser Thr Leu Tyr Thr Lys Ala Asn Leu Ile Leu Cys Arg Arg	
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gac tat ctg agg ctc ttt ggt gta acg gga aac tgc gct gcc tgt agt	416
Asp Tyr Leu Arg Leu Phe Gly Val Thr Gly Asn Cys Ala Ala Cys Ser	
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Lys Leu Ile Pro Ala Phe Glu Met Val Met Arg Ala Lys Asp Asn Val	
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tac cac ctg gac tgc ttt gca tgt cag ctt tgt aat cag aga ttt tgt	512
Tyr His Leu Asp Cys Phe Ala Cys Gln Leu Cys Asn Gln Arg Phe Cys	
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ggt gga gac aaa ttt ttc cta aag aat aac atg atc ctt tgc cag acg	560
Val Gly Asp Lys Phe Phe Leu Lys Asn Asn Met Ile Leu Cys Gln Thr	
114 119 124 129	
gac tac gag gaa ggt tta atg aaa gaa ggt tat gca ccc cag gtt cgc	608
Asp Tyr Glu Glu Gly Leu Met Lys Glu Gly Tyr Ala Pro Gln Val Arg	
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Thr Glu Val Asp Ser Met Tyr Val Phe Lys Gly Asp Glu Val Ile Glu				
124	129	134	139	
tac gat ggc gag ttt tct gct gac acc atc gtg gag ttt ctg ctt gat				664
Tyr Asp Gly Glu Phe Ser Ala Asp Thr Ile Val Glu Phe Leu Leu Asp				
140	145	150	155	
gtc cta gag gac cct gtg gaa ttg att gaa ggt gaa cga gag ctg cag				712
Val Leu Glu Asp Pro Val Glu Leu Ile Glu Gly Glu Arg Glu Leu Gln				
156	161	166	171	
gcg ttt gag aat att gag gat gag atc aaa ctc att ggc tac ttc aag				760
Ala Phe Glu Asn Ile Glu Asp Glu Ile Lys Leu Ile Gly Tyr Phe Lys				
172	177	182	187	
agc aaa gac tca gag cat tac aaa gcc ttc gag gat gca gct gag gag				808
Ser Lys Asp Ser Glu His Tyr Lys Ala Phe Glu Asp Ala Ala Glu Glu				
188	193	198	203	
ttt cat ccc tac atc ccc ttc ttc gcc acc ttc gac agc aag gtg gca				856
Phe His Pro Tyr Ile Pro Phe Phe Ala Thr Phe Asp Ser Lys Val Ala				
204	209	214	219	
aag aag ctg acc ctg aag ctg aat gag att gat ttc tac gag gcc ttc				904
Lys Lys Leu Thr Leu Lys Leu Asn Glu Ile Asp Phe Tyr Glu Ala Phe				
220	225	230	235	
atg gaa gag cct gtg acc atc cca gac aag ccc aat agc gaa gag gag				952
Met Glu Glu Pro Val Thr Ile Pro Asp Lys Pro Asn Ser Glu Glu Glu				
236	241	246	251	
att gtc aac ttc gtt gag gag cac agg aga tca acc ctg agg aaa ctg				1000
Ile Val Asn Phe Val Glu Glu His Arg Arg Ser Thr Leu Arg Lys Leu				
252	257	262	267	
aag ccg gag agt atg tat gag acc tgg gag gat gat atg gat gga atc				1048
Lys Pro Glu Ser Met Tyr Glu Thr Trp Glu Asp Asp Met Asp Gly Ile				
268	273	278	283	
cac att gtg gcc ttc gca gag gaa gct gat cct gat ggt ttc gag ttc				1096
His Ile Val Ala Phe Ala Glu Glu Ala Asp Pro Asp Gly Phe Glu Phe				
284	289	294	299	
tta gag act ctc aag gct gtg gcc caa gat aac act gaa aac cca gat				1144
Leu Glu Thr Leu Lys Ala Val Ala Gln Asp Asn Thr Glu Asn Pro Asp				
300	305	310	315	
ctt agc atc atc tgg att gac cct gat gac ttc ccc ctg ctg gtc cca				1192
Leu Ser Ile Ile Trp Ile Asp Pro Asp Asp Phe Pro Leu Leu Val Pro				
316	321	326	331	
tac tgg gag aag acg ttt gac atc gac ttg tca gcc cca caa ata gga				1240
Tyr Trp Glu Lys Thr Phe Asp Ile Asp Leu Ser Ala Pro Gln Ile Gly				
332	337	342	347	

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Val Val Asn Val Thr Asp Ala Asp Arg Leu Trp Met Glu Met Asp Asp	
348 353 358 363	
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Glu Glu Asp Leu Pro Ser Ala Glu Glu Leu Glu Asp Trp Leu Glu Asp	
364 369 374 379	
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Val Leu Glu Gly Glu Ile Asn Thr Glu Asp Asp Asp Asp Asp Asp Asp	
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Asp *	
396	

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gtcggacgca gggcgctggg ccgggtttcg gcttcggcca cagctttttt tctcaagggt	240
ca atg aaa gcc ttc cac act ttc tgt gtt gtc ctt ctg gtg ttt ggg	287
Met Lys Ala Phe His Thr Phe Cys Val Val Leu Leu Val Phe Gly	
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Ser Val Ser Glu Ala Lys Phe Asp Asp Phe Glu Asp Glu Glu Asp Ile	
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gta gag tat gat gat aat gac ttc gct gaa ttt gag gat gtc atg gaa	383
Val Glu Tyr Asp Asp Asn Asp Phe Ala Glu Phe Glu Asp Val Met Glu	
32 37 42 47	
gac tct gtt act gaa tct cct caa cgg gtc ata atc act gaa gat gat	431
Asp Ser Val Thr Glu Ser Pro Gln Arg Val Ile Ile Thr Glu Asp Asp	
48 53 58 63	
gaa gat gag acc act gtg gag ttg gaa ggg cag gat gaa aac caa gaa	479
Glu Asp Glu Thr Thr Val Glu Leu Glu Gly Gln Asp Glu Asn Gln Glu	
64 69 74 79	
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Gly Asp Phe Glu Asp Ala Asp Thr Gln Glu Gly Asp Thr Glu Ser Glu	
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cca tat gat gat gaa gaa ttt gaa ggt tat gaa gac aaa cca gat act	575
Pro Tyr Asp Asp Glu Glu Phe Glu Gly Tyr Glu Asp Lys Pro Asp Thr	
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tct tct agc aaa aat aaa gac cca ata acg att gtt gat gtt cct gca	623
Ser Ser Ser Lys Asn Lys Asp Pro Ile Thr Ile Val Asp Val Pro Ala	
112 117 122 127	
cac ctc cag aac agc tgg gag agt tat tat cta gaa att ttg atg gtg	671
His Leu Gln Asn Ser Trp Glu Ser Tyr Tyr Leu Glu Ile Leu Met Val	
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Thr Gly Leu Leu Ala Tyr Ile Met Asn Tyr Ile Ile Gly Lys Asn Lys	
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176 181 186 191	
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Thr Ser Thr Gly Lys Leu Asn Gln Glu Asn Glu His Ile Tyr Asn Leu	
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Trp Cys Ser Gly Arg Val Cys Cys Glu Gly Met Leu Ile Gln Leu Arg	
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Phe Leu Lys Arg Gln Asp Leu Leu Asn Val Leu Ala Arg Met Met Arg	
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Pro Val Ser Asp Gln Val Gln Ile Lys Val Thr Met Asn Asp Glu Asp	
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Leu Gln Lys Glu Met Gln Asp Leu Ser Glu Phe Cys Ser Asp Lys Pro	
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304 309 314 319	
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Phe Leu Thr His Tyr Ala Asp Lys Ile Glu Ser Val His Phe Ser Asp	
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Gln Phe Ser Gly Pro Lys Ile Met Gln Glu Glu Gly Gln Pro Leu Lys	
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Asn Met Val Ile Tyr Ser Ile Asp Lys Ala Lys Lys Phe Arg Leu Asn	
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Arg Glu Gly Lys Gln Lys Ala Asp Lys Asn Arg Ala Arg Val Glu Glu	
400 405 410 415	
aac ttc ttg aaa ctg aca cat gtg caa aga cag gaa gca gca cag tct	1535
Asn Phe Leu Lys Leu Thr His Val Gln Arg Gln Glu Ala Ala Gln Ser	
416 421 426 431	
cgg cgg gag gag aaa aaa aga gca gag aag gag cga atc atg aat gag	1583
Arg Arg Glu Glu Lys Lys Arg Ala Glu Lys Glu Arg Ile Met Asn Glu	
432 437 442 447	
gaa gat cct gag aaa cag cgc agg ctg gag gag gct gca ttg agg cgt	1631
Glu Asp Pro Glu Lys Gln Arg Arg Leu Glu Glu Ala Ala Leu Arg Arg	
448 453 458 463	
gag caa aag aag ttg gaa aag aag caa atg aaa atg aaa caa atc aaa	1679

Glu Gln Lys Lys Leu Glu Lys Lys Gln Met Lys Met Lys Gln Ile Lys
 464 469 474 479

gtg aaa gcc atg taa agccatccca gagatttgag ttctgatgcc acctgtaagc 1734
 Val Lys Ala Met *
 480

tctgaattca caggaaacat gaaaaacgcc agtccatttc tcaaccttaa atttcagaca 1794

gtcttgggca actgagaaat ccttatttca tcatctactc tgtttggggg ttgggggtttt 1854

acagagattg aagatacctg gaaagggctc tgtttcaaga attttttttt ccagataatc 1914

aaattatttt gattatttta taaaaggaat gatctatgaa atctgtgtag gttttaaata 1974

ttttaaaaaat tataatacaa atcatcagtg ctttttagtac ttctgtgttt aaagaaatac 2034

catgaaatth ataggtagat aaccagattg ttgctttttg tttaaaccac gcagttgaaa 2094

tggctataaa gactgactct aaaccaagat tctgcaaata atgattggaa ttgcacaata 2154

aacattgctt gatgttttaa aaaaaaaaaa 2183

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (81)..(578)

<400> 669

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gggcccggcg ccatccgcgg atg agc cac aga acc tct tcc acc ttc cga 110
 Met Ser His Arg Thr Ser Ser Thr Phe Arg
 1 5

gcg gag aga agt ttc cat tcc tct tcc tct tcc tcc tcc tcg gcc tcc 158
 Ala Glu Arg Ser Phe His Ser Ser Ser Ser Ser Ser Ser Ala Ser
 11 16 21 26

cgt gct ctc ccg ggc cag gac ccg ccc atg gag aag gcc ctg agc atg 206
 Arg Ala Leu Pro Gly Gln Asp Pro Pro Met Glu Lys Ala Leu Ser Met
 27 32 37 42

ttt tcc gat gac ttt ggc agc ttc atg cgg ccc cac tcg gag ccc ctg 254
 Phe Ser Asp Asp Phe Gly Ser Phe Met Arg Pro His Ser Glu Pro Leu
 43 48 53 58

gcc ttc cca gcc cgc ccc ggt ggg gca ggc aac atc aag acc cta gga 302
 Ala Phe Pro Ala Arg Pro Gly Gly Ala Gly Asn Ile Lys Thr Leu Gly
 59 64 69 74

gac gcc tat gag ttt gcg gtg gac gtg aga gac ttc tca cct gaa gac	350
Asp Ala Tyr Glu Phe Ala Val Asp Val Arg Asp Phe Ser Pro Glu Asp	
75 80 85 90	
atc att gtc acc acc tcc aac aac cac atc gag gtg cgg gct gag aag	398
Ile Ile Val Thr Thr Ser Asn Asn His Ile Glu Val Arg Ala Glu Lys	
91 96 101 106	
ctg gcg gct gac ggc act gtc atg aac acc ttc gct cac aag tgc cag	446
Leu Ala Ala Asp Gly Thr Val Met Asn Thr Phe Ala His Lys Cys Gln	
107 112 117 122	
ctg ccg gag gac gtg gac ccg acg tcg gtg acc tcg gct ctg cgg gag	494
Leu Pro Glu Asp Val Asp Pro Thr Ser Val Thr Ser Ala Leu Arg Glu	
123 128 133 138	
gac ggc agc ctc act atc cgg gca cgg cgt cac ccg cat aca gaa cac	542
Asp Gly Ser Leu Thr Ile Arg Ala Arg Arg His Pro His Thr Glu His	
139 144 149 154	
gtc cag cag acc ttc cgg acg gag atc aaa atc tga gtgc ctctctggtc	592
Val Gln Gln Thr Phe Arg Thr Glu Ile Lys Ile *	
155 160 165	
agtgtgcctt aggggtggcct ctcaactccca ccactctggg ccccttgggg gaggactggg	652
gagggggccg tgggagagcc ctgacgctgg aacctgtata cacaataaag gacagtctca	712
cagaaaa	719

<210> 670
 <211> 772
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (24)..(665)

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	Met Ala Val Leu Ser Ala Pro Gly Leu
	1 5
cgc ggc ttc cgg atc ctt ggt ctg cgc tcc agc gtg ggc ccg gct gtg	98
Arg Gly Phe Arg Ile Leu Gly Leu Arg Ser Ser Val Gly Pro Ala Val	
10 15 20 25	
cag gca cga ggt gtc cat cag agc gtg gcc acc gat ggc cca agc agc	146
Gln Ala Arg Gly Val His Gln Ser Val Ala Thr Asp Gly Pro Ser Ser	
26 31 36 41	
acc cag cct gcc ctg cca aag gcc aga gcc gtg gct ccc aaa ccc agc	194

Thr Gln Pro Ala Leu Pro Lys Ala Arg Ala Val Ala Pro Lys Pro Ser	
42 47 52 57	
agc cgg ggc gag tat gtg gtg gcc aag ctg gat gac ctc gtc aac tgg	242
Ser Arg Gly Glu Tyr Val Val Ala Lys Leu Asp Asp Leu Val Asn Trp	
58 63 68 73	
gcc cgc cgg agt tct ctg tgg ccc atg acc ttc ggc ctg gcc tgc tgc	290
Ala Arg Arg Ser Ser Leu Trp Pro Met Thr Phe Gly Leu Ala Cys Cys	
74 79 84 89	
gcc gtg gag atg atg cac atg gca gca ccc cgc tac gac atg gac cgc	338
Ala Val Glu Met Met His Met Ala Ala Pro Arg Tyr Asp Met Asp Arg	
90 95 100 105	
ttt ggc gtg gtc ttc cgc gcc agc ccg cgc cag tcc gac gtc atg atc	386
Phe Gly Val Val Phe Arg Ala Ser Pro Arg Gln Ser Asp Val Met Ile	
106 111 116 121	
gtg gcc ggc aca ctc acc aac aag atg gcc cca gcg ctt cgc aag gtc	434
Val Ala Gly Thr Leu Thr Asn Lys Met Ala Pro Ala Leu Arg Lys Val	
122 127 132 137	
tac gac cag atg ccg gag ccg cgc tac gtg gtc tcc atg ggg agc tgc	482
Tyr Asp Gln Met Pro Glu Pro Arg Tyr Val Val Ser Met Gly Ser Cys	
138 143 148 153	
gcc aac gga gga ggc tac tac cac tat tcc tac tcg gtg gtg agg ggc	530
Ala Asn Gly Gly Gly Tyr Tyr His Tyr Ser Tyr Ser Val Val Arg Gly	
154 159 164 169	
tgc gac cgc atc gtg ccc gtg gac atc tac atc cca ggc tgc cca cct	578
Cys Asp Arg Ile Val Pro Val Asp Ile Tyr Ile Pro Gly Cys Pro Pro	
170 175 180 185	
acg gcc gag gcc ctg ctc tac ggc atc ctg cag ctg cag agg aag atc	626
Thr Ala Glu Ala Leu Leu Tyr Gly Ile Leu Gln Leu Gln Arg Lys Ile	
186 191 196 201	
aag cgg gag cgg agg ctg cag atc tgg tac cgc agg tag cgccgccgcc	675
Lys Arg Glu Arg Arg Leu Gln Ile Trp Tyr Arg Arg *	
202 207 212	
gccgccgccg gagcctgtcg ccgtcctgtc cccagcctgc ttgtgtcccg tgaggttgtc	735
aataaacctg ccctcgggct gccgccaaaa aaaaaaa	772

<210> 671
 <211> 1482
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS

<222> (20)..(1192)

<400> 671

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Met Leu Ala Thr Leu Ala Arg Val Ala Ala Leu	
1 5	
cgc aaa acc tgc ctc ttc tcc ggc cgg ggc ggc ggg agg ggg ctg tgg	100
Arg Lys Thr Cys Leu Phe Ser Gly Arg Gly Gly Arg Gly Leu Trp	
12 17 22 27	
act ggc cgc ccg cag tca gat atg aac aat ata aag cca ttg gaa ggg	148
Thr Gly Arg Pro Gln Ser Asp Met Asn Asn Ile Lys Pro Leu Glu Gly	
28 33 38 43	
gta aaa att ctg gat cta aca aga gtc ctg gcg gga cct ttt gct act	196
Val Lys Ile Leu Asp Leu Thr Arg Val Leu Ala Gly Pro Phe Ala Thr	
44 49 54 59	
atg aat tta gga gat ctt gga gca gaa gtt ata aaa gtg gag aga cca	244
Met Asn Leu Gly Asp Leu Gly Ala Glu Val Ile Lys Val Glu Arg Pro	
60 65 70 75	
gga gct ggt gat gat aca cga act tgg ggg cca cct ttt gtt ggg aca	292
Gly Ala Gly Asp Asp Thr Arg Thr Trp Gly Pro Pro Phe Val Gly Thr	
76 81 86 91	
gaa agt aca tat tat ctc agt gtt aac cga aat aaa aaa agt att gct	340
Glu Ser Thr Tyr Tyr Leu Ser Val Asn Arg Asn Lys Lys Ser Ile Ala	
92 97 102 107	
gtt aat atc aag gat cca aaa ggg gtg aaa atc atc aaa gag ctt gca	388
Val Asn Ile Lys Asp Pro Lys Gly Val Lys Ile Ile Lys Glu Leu Ala	
108 113 118 123	
gct gtt tgt gat gtg ttt gtg gaa aac tat gtc cct ggc aaa ctg tct	436
Ala Val Cys Asp Val Phe Val Glu Asn Tyr Val Pro Gly Lys Leu Ser	
124 129 134 139	
gca atg ggc ctg gga tat gaa gat ata gac gag att gct cct cac atc	484
Ala Met Gly Leu Gly Tyr Glu Asp Ile Asp Glu Ile Ala Pro His Ile	
140 145 150 155	
atc tat tgt tcc atc aca ggg tat ggt cag aca ggt cca att tct cag	532
Ile Tyr Cys Ser Ile Thr Gly Tyr Gly Gln Thr Gly Pro Ile Ser Gln	
156 161 166 171	
cga gct ggt tat gat gct gtt gcc tcg gct gtt tct ggt ctg atg cac	580
Arg Ala Gly Tyr Asp Ala Val Ala Ser Ala Val Ser Gly Leu Met His	
172 177 182 187	
atc aca ggg cct gag gtg gcg tgt ttg tct cac ata gct gca aat tat	628
Ile Thr Gly Pro Glu Val Ala Cys Leu Ser His Ile Ala Ala Asn Tyr	
188 193 198 203	
ctt att ggt caa aag gaa gca aaa cgt tgg ggt aca gct cat ggc agt	676
Leu Ile Gly Gln Lys Glu Ala Lys Arg Trp Gly Thr Ala His Gly Ser	

204	209	214	219	
atc gtt cct tac cag gct ttt aaa acc aag gat ggc tat att gta gtt				724
Ile Val Pro Tyr Gln Ala Phe Lys Thr Lys Asp Gly Tyr Ile Val Val				
220	225	230	235	
gga gca gga aat aac cag cag ttt gcc acc gtc tgc aag atc ttg gat				772
Gly Ala Gly Asn Asn Gln Gln Phe Ala Thr Val Cys Lys Ile Leu Asp				
236	241	246	251	
ttg cct gag ttg att gat aat tcc aag tat aaa act aac cac ctt cgg				820
Leu Pro Glu Leu Ile Asp Asn Ser Lys Tyr Lys Thr Asn His Leu Arg				
252	257	262	267	
gta cac aat aga aaa gag ctt att aaa ata tta tct gaa cgg ttt gaa				868
Val His Asn Arg Lys Glu Leu Ile Lys Ile Leu Ser Glu Arg Phe Glu				
268	273	278	283	
gaa gaa ctg acc agc aag tgg tta tat ctt ttt gaa ggc agt gga gtc				916
Glu Glu Leu Thr Ser Lys Trp Leu Tyr Leu Phe Glu Gly Ser Gly Val				
284	289	294	299	
ccg tat ggc cca atc aac aac atg aag aat gta ttt gca gaa cct cag				964
Pro Tyr Gly Pro Ile Asn Asn Met Lys Asn Val Phe Ala Glu Pro Gln				
300	305	310	315	
gta tta cac aat ggc ctc gtt atg gag atg gag cat cca act gtg ggg				1012
Val Leu His Asn Gly Leu Val Met Glu Met Glu His Pro Thr Val Gly				
316	321	326	331	
aag att tcc gtc cca ggc cca gct gtg aga tac agt aag ttc aag atg				1060
Lys Ile Ser Val Pro Gly Pro Ala Val Arg Tyr Ser Lys Phe Lys Met				
332	337	342	347	
tca gag gcc agg ccg ccc ccc ctg ctc ggg cag cac aca acg cac atc				1108
Ser Glu Ala Arg Pro Pro Pro Leu Leu Gly Gln His Thr Thr His Ile				
348	353	358	363	
ctg aag gag gtc ctg aga tac gat gac agg gcc atc ggg gag ctg ctc				1156
Leu Lys Glu Val Leu Arg Tyr Asp Asp Arg Ala Ile Gly Glu Leu Leu				
364	369	374	379	
agc gct gga gtg gtg gac caa cat gaa act cac tga caaa ggaaaagggc				1206
Ser Ala Gly Val Val Asp Gln His Glu Thr His *				
380	385	390		
tcttcctcat aacctcgatc cgaatacact ggcaaaggca acactttgct tggacccttc				1266
tccccagttc tgataccact aagaagaaga tttagagtaa ctccagattt cttacatggc				1326
atctccagaa tggctctggt attaataaat ctagtgcctt ttaaatagtat cccacgtttt				1386
gttccttacc atcttttttt tcagatgatg atttcattat ggatttgtgg gattttttaa				1446
aataaagatt taattttttt cctggaaaaa aaaaaa				1482

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<220>
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 <222> (65)..(991)

<400> 672

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agcc atg gtt tca gac gaa gat gaa ttg aat ctt ctg gtt att gta gtt      109
  Met Val Ser Asp Glu Asp Glu Leu Asn Leu Leu Val Ile Val Val
      1             5             10

gat gcc aac cca att tgg tgg gga aag caa gca tta aag gaa tct cag      157
Asp Ala Asn Pro Ile Trp Trp Gly Lys Gln Ala Leu Lys Glu Ser Gln
  16             21             26             31

ttc act tta tcc aaa tgc ata gat gcc gtg atg gtg ctg gga aat tcg      205
Phe Thr Leu Ser Lys Cys Ile Asp Ala Val Met Val Leu Gly Asn Ser
  32             37             42             47

cat tta ttc atg aat cgt tcc aac aaa ctt gct gtg ata gca agt cac      253
His Leu Phe Met Asn Arg Ser Asn Lys Leu Ala Val Ile Ala Ser His
  48             53             58             63

att caa gaa agc cga ttc tta tat cct gga aag aat ggc aga ctt gga      301
Ile Gln Glu Ser Arg Phe Leu Tyr Pro Gly Lys Asn Gly Arg Leu Gly
  64             69             74             79

gac ttc ttc gga gac cct ggc aac cct cct gaa ttt aat ccc tct ggg      349
Asp Phe Phe Gly Asp Pro Gly Asn Pro Pro Glu Phe Asn Pro Ser Gly
  80             85             90             95

agt aaa gat gga aaa tac gaa ctt tta acc tca gca aat gaa gtt att      397
Ser Lys Asp Gly Lys Tyr Glu Leu Leu Thr Ser Ala Asn Glu Val Ile
  96             101            106            111

gtt gaa gag att aaa gat cta atg acc aaa agt gac ata aag ggt caa      445
Val Glu Glu Ile Lys Asp Leu Met Thr Lys Ser Asp Ile Lys Gly Gln
  112            117            122            127

cat aca gaa act ttg ctg gca gga tcc ctg gcc aaa gcc ctt tgc tac      493
His Thr Glu Thr Leu Leu Ala Gly Ser Leu Ala Lys Ala Leu Cys Tyr
  128            133            138            143

att cat aga atg aac aag gaa gtt aaa gac aat cag gaa atg aaa tca      541
Ile His Arg Met Asn Lys Glu Val Lys Asp Asn Gln Glu Met Lys Ser
  144            149            154            159

agg ata ttg gtg att aag gct gca gaa gac agt gcg ttg cag tat atg      589
Arg Ile Leu Val Ile Lys Ala Ala Glu Asp Ser Ala Leu Gln Tyr Met
  160            165            170            175

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aac ttc atg aat gtc atc ttt gca gca cag aaa cag aat att ttg att	637
Asn Phe Met Asn Val Ile Phe Ala Ala Gln Lys Gln Asn Ile Leu Ile	
176 181 186 191	
gat gcc tgt gtt tta gac tcc gac tca ggg ctc ctc caa cag gct tgt	685
Asp Ala Cys Val Leu Asp Ser Asp Ser Gly Leu Leu Gln Gln Ala Cys	
192 197 202 207	
gac atc acg gga gga ctg tac ctg aag gtg cct cag atg cct tct ctt	733
Asp Ile Thr Gly Gly Leu Tyr Leu Lys Val Pro Gln Met Pro Ser Leu	
208 213 218 223	
ctg cag tat ttg ctg tgg gtg ttt ctt ccc gat caa gat cag aga tct	781
Leu Gln Tyr Leu Leu Trp Val Phe Leu Pro Asp Gln Asp Gln Arg Ser	
224 229 234 239	
cag tta atc ctc cca ccc cca gtt cat gtt gac tac agg gct gct tgc	829
Gln Leu Ile Leu Pro Pro Pro Val His Val Asp Tyr Arg Ala Ala Cys	
240 245 250 255	
ttc tgt cat cga aat ctc att gaa att ggt tat gtc tgt tct gtg tgt	877
Phe Cys His Arg Asn Leu Ile Glu Ile Gly Tyr Val Cys Ser Val Cys	
256 261 266 271	
ttg tca ata ttc tgc aat ttc agc ccc att tgt act acg tgc gag aca	925
Leu Ser Ile Phe Cys Asn Phe Ser Pro Ile Cys Thr Thr Cys Glu Thr	
272 277 282 287	
gcc ttt aaa att tct ctg cct cca gtg ctg aaa gcc aag aaa aag aaa	973
Ala Phe Lys Ile Ser Leu Pro Pro Val Leu Lys Ala Lys Lys Lys Lys	
288 293 298 303	
ctg aaa gtg tct gcc tga ggataa aatattttcc ccattctttta gagctgttaa	1027
Leu Lys Val Ser Ala *	
304 309	
tagaaattat atagcagatt ctttggtggg aagactgaaa aaaataaaga taggtatagg	1087
ataattttta atatggtgac cttacagaaa atattttccca aacatccttt tcatcctgtg	1147
cttctggagg actgatttgt ttgaggggaat cattctatgc attatatacct aaaatattct	1207
atgactgggt tctgtcaaaa aaaaa	1232

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 <211> 2900
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (66)..(2762)

<400> 673

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ccacc atg ttc agc cag cag cag cag cag cag ctc cag caa cag cag 107
Met Phe Ser Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln
1 5 10

cag cag ctc cag cag tta cag cag cag cag ctc cag cag cag caa ttg 155
Gln Gln Leu Gln Gln Leu Gln Gln Gln Gln Leu Gln Gln Gln Gln Leu
15 20 25 30

cag cag cag cag tta ctg cag ctc cag cag ctg ctc cag cag tcc cca 203
Gln Gln Gln Gln Leu Leu Gln Leu Gln Gln Leu Leu Gln Gln Ser Pro
31 36 41 46

cca cag gcc ccg ttg ccc atg gct gtc agc cgg ggg ctc ccc ccg cag 251
Pro Gln Ala Pro Leu Pro Met Ala Val Ser Arg Gly Leu Pro Pro Gln
47 52 57 62

cag cca cag cag ccg ctt ctg aat ctc cag ggc acc aac tca gcc tcc 299
Gln Pro Gln Gln Pro Leu Leu Asn Leu Gln Gly Thr Asn Ser Ala Ser
63 68 73 78

ctc ctc aac ggc tcc atg ctg cag aga gct ttg ctt tta cag cag ttg 347
Leu Leu Asn Gly Ser Met Leu Gln Arg Ala Leu Leu Leu Gln Gln Leu
79 84 89 94

caa gga ctg gac cag ttt gca atg cca cca gcc acg tat gac act gcc 395
Gln Gly Leu Asp Gln Phe Ala Met Pro Pro Ala Thr Tyr Asp Thr Ala
95 100 105 110

ggt ctc acc atg ccc aca gca aca ctg ggt aac ctc cga ggc tat ggc 443
Gly Leu Thr Met Pro Thr Ala Thr Leu Gly Asn Leu Arg Gly Tyr Gly
111 116 121 126

atg gca tcc cca ggc ctc gca gcc ccc agc ctc aca ccc cca caa ctg 491
Met Ala Ser Pro Gly Leu Ala Ala Pro Ser Leu Thr Pro Pro Gln Leu
127 132 137 142

gcc act cca aat ttg caa cag ttc ttt ccc cag gcc act cgc cag tcc 539
Ala Thr Pro Asn Leu Gln Gln Phe Phe Pro Gln Ala Thr Arg Gln Ser
143 148 153 158

ttg ctg gga cct cct cct gtt ggg gtc ccc atg aac cct tcc cag ttc 587
Leu Leu Gly Pro Pro Pro Val Gly Val Pro Met Asn Pro Ser Gln Phe
159 164 169 174

aac ctt tca gga cgg aac ccc cag aaa cag gcc cgg acc tcc tcc tct 635
Asn Leu Ser Gly Arg Asn Pro Gln Lys Gln Ala Arg Thr Ser Ser Ser
175 180 185 190

acc acc ccc aat cga aag gat tct tct tct cag aca atg cct gtg gaa 683
Thr Thr Pro Asn Arg Lys Asp Ser Ser Ser Gln Thr Met Pro Val Glu
191 196 201 / 206

gac aag tca gac ccc cca gag ggg tct gag gaa gcc gca gag ccc cgg 731
Asp Lys Ser Asp Pro Pro Glu Gly Ser Glu Glu Ala Ala Glu Pro Arg

207	212	217	222	
atg gac aca cca gaa gac caa gat tta ccg ccc tgc cca gag gac atc				779
Met Asp Thr Pro Glu Asp Gln Asp Leu Pro Pro Cys Pro Glu Asp Ile				
223	228	233	238	
gcc aag gaa aaa cgc act cca gca cct gag cct gag cct tgt gag gcg				827
Ala Lys Glu Lys Arg Thr Pro Ala Pro Glu Pro Glu Pro Cys Glu Ala				
239	244	249	254	
tcc gag ctg cca gca aag aga ttg agg agc tca gaa gag ccc aca gag				875
Ser Glu Leu Pro Ala Lys Arg Leu Arg Ser Ser Glu Glu Pro Thr Glu				
255	260	265	270	
aag gaa cct cca ggg cag tta cag gtg aag gcc cag ccg cag gcc cgg				923
Lys Glu Pro Pro Gly Gln Leu Gln Val Lys Ala Gln Pro Gln Ala Arg				
271	276	281	286	
atg aca gta ccg aaa cag aca cag aca cca gac ctg ctg cct gag gcc				971
Met Thr Val Pro Lys Gln Thr Gln Thr Pro Asp Leu Leu Pro Glu Ala				
287	292	297	302	
ctg gaa gcc caa gtg ctg cca cga ttc cag cca cgg gtc ctg cag gtc				1019
Leu Glu Ala Gln Val Leu Pro Arg Phe Gln Pro Arg Val Leu Gln Val				
303	308	313	318	
cag gcc cag gtg cag tca cag act cag ccg cgg ata cca tcc aca gac				1067
Gln Ala Gln Val Gln Ser Gln Thr Gln Pro Arg Ile Pro Ser Thr Asp				
319	324	329	334	
acc cag gtg cag cca aag ctg cag aag cag gcg caa aca cag acc tct				1115
Thr Gln Val Gln Pro Lys Leu Gln Lys Gln Ala Gln Thr Gln Thr Ser				
335	340	345	350	
cca gag cac tta gtg ctg caa cag aag cag gtg cag cca cag ctg cag				1163
Pro Glu His Leu Val Leu Gln Gln Lys Gln Val Gln Pro Gln Leu Gln				
351	356	361	366	
cag gag gca gag cca cag aag cag gtg cag cca cag gta cag cca cag				1211
Gln Glu Ala Glu Pro Gln Lys Gln Val Gln Pro Gln Val Gln Pro Gln				
367	372	377	382	
gca cat tca cag ggc cca agg cag gtg cag ctg cag cag gag gca gag				1259
Ala His Ser Gln Gly Pro Arg Gln Val Gln Leu Gln Gln Glu Ala Glu				
383	388	393	398	
ccg ctg aag cag gtg cag cca cag gtg cag ccc cag gca cat tca cag				1307
Pro Leu Lys Gln Val Gln Pro Gln Val Gln Pro Gln Ala His Ser Gln				
399	404	409	414	
ccc cca agg cag gtg cag ctg cag ctg cag aag cag gtc cag aca cag				1355
Pro Pro Arg Gln Val Gln Leu Gln Leu Gln Lys Gln Val Gln Thr Gln				
415	420	425	430	
aca tat cca cag gtc cac aca cag gca cag cca agc gtc cag cca cag				1403
Thr Tyr Pro Gln Val His Thr Gln Ala Gln Pro Ser Val Gln Pro Gln				
431	436	441	446	

gag cat cct cca gcg cag gtg tca gta cag cca cca gag cag acc cat	1451
Glu His Pro Pro Ala Gln Val Ser Val Gln Pro Pro Glu Gln Thr His	
447 452 457 462	
gag cag cct cac acc cag ccg cag gtg tcg ttg ctg gct cca gag caa	1499
Glu Gln Pro His Thr Gln Pro Gln Val Ser Leu Leu Ala Pro Glu Gln	
463 468 473 478	
aca cca gtt gtg gtt cat gtc tgc ggg ctg gag atg cca cct gat gca	1547
Thr Pro Val Val Val His Val Cys Gly Leu Glu Met Pro Pro Asp Ala	
479 484 489 494	
gta gaa gct ggt gga ggc atg gaa aag acc ttg cca gag cct gtg ggc	1595
Val Glu Ala Gly Gly Gly Met Glu Lys Thr Leu Pro Glu Pro Val Gly	
495 500 505 510	
acc caa gtc agc atg gaa gag att cag aat gag tcg gcc tgt ggc cta	1643
Thr Gln Val Ser Met Glu Glu Ile Gln Asn Glu Ser Ala Cys Gly Leu	
511 516 521 526	
gat gtg gga gaa tgt gaa aac aga gcg aga gag atg cca ggg gta tgg	1691
Asp Val Gly Glu Cys Glu Asn Arg Ala Arg Glu Met Pro Gly Val Trp	
527 532 537 542	
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Gly Ala Gly Gly Ser Leu Lys Val Thr Ile Leu Gln Ser Ser Asp Ser	
543 548 553 558	
cgg gcc ttt agc act gta ccc ctg aca cct gtc ccc cgc ccc agt gac	1787
Arg Ala Phe Ser Thr Val Pro Leu Thr Pro Val Pro Arg Pro Ser Asp	
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tcc gtc tcc tcc acc cct gcg gct acc agc act ccc tct aag cag gcc	1835
Ser Val Ser Ser Thr Pro Ala Ala Thr Ser Thr Pro Ser Lys Gln Ala	
575 580 585 590	
ctc cag ttc ttc tgc tac atc tgc aag gcc agc tgc tcc agc cag cag	1883
Leu Gln Phe Phe Cys Tyr Ile Cys Lys Ala Ser Cys Ser Ser Gln Gln	
591 596 601 606	
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Glu Phe Gln Asp His Met Ser Glu Pro Gln His Gln Gln Arg Leu Gly	
607 612 617 622	
gag atc cag cac atg agc caa gcc tgc ctc ctg tcc ctg ctg ccc gtg	1979
Glu Ile Gln His Met Ser Gln Ala Cys Leu Leu Ser Leu Leu Pro Val	
623 628 633 638	
ccc cgg gac gtc ctg gag aca gag gat gag gag cct cca cca agg cgc	2027
Pro Arg Asp Val Leu Glu Thr Glu Asp Glu Glu Pro Pro Pro Arg Arg	
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Trp Cys Asn Thr Cys Gln Leu Tyr Tyr Met Gly Asp Leu Ile Gln His	
655 660 665 670	

cgc agg aca cag gac cac aag att gcc aaa caa tcc ttg cga ccc ttc	2123
Arg Arg Thr Gln Asp His Lys Ile Ala Lys Gln Ser Leu Arg Pro Phe	
671 676 681 686	
tgc acc gtt tgc aac cgc tac ttc aaa acc cct cgc aag ttt gtg gag	2171
Cys Thr Val Cys Asn Arg Tyr Phe Lys Thr Pro Arg Lys Phe Val Glu	
687 692 697 702	
cac gtg aag tcc cag ggg cat aag gac aaa gcc aag gag ctg aag tgc	2219
His Val Lys Ser Gln Gly His Lys Asp Lys Ala Lys Glu Leu Lys Ser	
703 708 713 718	
ctt gag aaa gaa att gct ggc caa gat gag gac cac ttc att aca gtg	2267
Leu Glu Lys Glu Ile Ala Gly Gln Asp Glu Asp His Phe Ile Thr Val	
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gac gct gtg ggt tgc ttc gag ggt gat gaa gaa gag gaa gag gat gat	2315
Asp Ala Val Gly Cys Phe Glu Gly Asp Glu Glu Glu Glu Asp Asp	
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Glu Asp Glu Glu Glu Ile Glu Val Glu Glu Glu Leu Cys Lys Gln Val	
751 756 761 766	
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Arg Ser Arg Asp Ile Ser Arg Glu Glu Trp Lys Gly Ser Glu Thr Tyr	
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Ser Pro Asn Thr Ala Tyr Gly Val Asp Phe Leu Val Pro Val Met Gly	
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tat atc tgc cgc atc tgc cac aag ttc tat cac agc aac tca ggg gca	2507
Tyr Ile Cys Arg Ile Cys His Lys Phe Tyr His Ser Asn Ser Gly Ala	
799 804 809 814	
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Gln Leu Ser His Cys Lys Ser Leu Gly His Phe Glu Asn Leu Gln Lys	
815 820 825 830	
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Tyr Lys Ala Ala Lys Asn Pro Ser Pro Thr Thr Arg Pro Val Ser Arg	
831 836 841 846	
cgg tgc gca atc aac gcc cgg aac gct ttg aca gcc ctg ttc acc tcc	2651
Arg Cys Ala Ile Asn Ala Arg Asn Ala Leu Thr Ala Leu Phe Thr Ser	
847 852 857 862	
agc ggc cgc cca ccc tcc cag ccc aac acc cag gac aaa aca ccc agc	2699
Ser Gly Arg Pro Pro Ser Gln Pro Asn Thr Gln Asp Lys Thr Pro Ser	
863 868 873 878	
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Lys Val Thr Ala Arg Pro Ser Gln Pro Pro Leu Pro Arg Arg Ser Thr	
879 884 889 894	
cgc ctc aaa acc tga tagagggacc tcctgtccc tggcctgcct ggggtccagat	2802

Arg Leu Lys Thr *
895

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tggcggcccc aagcggctgg gacgagatgt ggaa atg gaa gaa atg att gag 172
Met Glu Glu Met Ile Glu
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cag ctg caa gag aaa gtt cat gag ctt gaa aaa caa aat gaa acc ctc 220
Gln Leu Gln Glu Lys Val His Glu Leu Glu Lys Gln Asn Glu Thr Leu
7 12 17 22
aaa aac aga ctg att tca gcc aaa cag caa ctt caa acc cag ggt tac 268
Lys Asn Arg Leu Ile Ser Ala Lys Gln Gln Leu Gln Thr Gln Gly Tyr
23 28 33 38
agg caa act cca tac aat aat gta caa tct cgt att aac act ggg cgt 316
Arg Gln Thr Pro Tyr Asn Asn Val Gln Ser Arg Ile Asn Thr Gly Arg
39 44 49 54
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Arg Lys Ala Asn Glu Asn Ala Gly Leu Gln Glu Cys Pro Arg Lys Gly
55 60 65 70
ata aaa ttc caa gat gca gat gta gca gaa act cca cat ccc atg ttt 412
Ile Lys Phe Gln Asp Ala Asp Val Ala Glu Thr Pro His Pro Met Phe
71 76 81 86
aca aaa tat ggc aac agt tta ctt gaa gaa gcc aga gga gaa ata aga 460
Thr Lys Tyr Gly Asn Ser Leu Leu Glu Glu Ala Arg Gly Glu Ile Arg
87 92 97 102
aat tta gaa aac gtt att cag tca caa aga ggc cag ata gag gag tta 508
Asn Leu Glu Asn Val Ile Gln Ser Gln Arg Gly Gln Ile Glu Glu Leu
103 108 113 118
gag cac ttg gct gag atc ctg aaa act cag ttg agg aga aaa gaa aat 556

Glu His Leu Ala Glu Ile Leu Lys Thr Gln Leu Arg Arg Lys Glu Asn	
119 124 129 134	
gaa att gag tta tct ctt ctt cag ctt cga gaa cag caa gct aca gat	604
Glu Ile Glu Leu Ser Leu Leu Gln Leu Arg Glu Gln Gln Ala Thr Asp	
135 140 145 150	
caa agg tca aat att cgg gac aat gta gaa atg att aag ctt cat aaa	652
Gln Arg Ser Asn Ile Arg Asp Asn Val Glu Met Ile Lys Leu His Lys	
151 156 161 166	
cag cta gta gag aaa agc aat gct ctt tca gca atg gaa gga aaa ttt	700
Gln Leu Val Glu Lys Ser Asn Ala Leu Ser Ala Met Glu Gly Lys Phe	
167 172 177 182	
att cag ctt caa gag aag caa aga act ctc aaa atc agc cac gat gct	748
Ile Gln Leu Gln Glu Lys Gln Arg Thr Leu Lys Ile Ser His Asp Ala	
183 188 193 198	
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Leu Met Ala Asn Gly Asp Glu Leu Asn Met Gln Leu Lys Glu Gln Arg	
199 204 209 214	
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215 220 225 230	
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Glu Arg Arg Ile Glu Glu Leu Gln Asp Arg Ile Asn Asp Leu Glu Lys	
231 236 241 246	
gaa cgg gaa ctt tta aag gaa aac tat gat aaa ctt tat gac agt gcc	940
Glu Arg Glu Leu Leu Lys Glu Asn Tyr Asp Lys Leu Tyr Asp Ser Ala	
247 252 257 262	
ttc agt gct gcc cat gaa gag caa tgg aag tta aag gag caa cag ctg	988
Phe Ser Ala Ala His Glu Glu Gln Trp Lys Leu Lys Glu Gln Gln Leu	
263 268 273 278	
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Lys Val Gln Ile Ala Gln Leu Glu Thr Ala Leu Lys Ser Asp Leu Thr	
279 284 289 294	
gac aaa act gaa atc ctt gac aga tta aaa act gaa aga gat caa aat	1084
Asp Lys Thr Glu Ile Leu Asp Arg Leu Lys Thr Glu Arg Asp Gln Asn	
295 300 305 310	
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Glu Lys Leu Val Gln Glu Asn Arg Glu Leu Gln Leu Gln Tyr Leu Glu	
311 316 321 326	
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327 332 337 342	
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Gln Glu Asn Asp Ile Asn Ala Asp Glu Leu Ser Glu Ala Leu Leu Leu	

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Tyr Glu Thr Ile Ala Ala Cys Gln Leu Lys Phe His Glu Ile Leu Glu	
583 588 593 598	
aaa agc ggc cga ata ttt tgt aca gca agt ttg att gga aca aaa gga	1996
Lys Ser Gly Arg Ile Phe Cys Thr Ala Ser Leu Ile Gly Thr Lys Gly	
599 604 609 614	
gac atc cca aat ttt ggc aca gtg gaa tac tgg ttc cga tta aga gtt	2044
Asp Ile Pro Asn Phe Gly Thr Val Glu Tyr Trp Phe Arg Leu Arg Val	
615 620 625 630	
ccc atg gat caa gca att cga ctt tat cga gaa agg gca aag gct ttg	2092
Pro Met Asp Gln Ala Ile Arg Leu Tyr Arg Glu Arg Ala Lys Ala Leu	
631 636 641 646	
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Gly Tyr Ile Thr Ser Asn Phe Lys Gly Pro Glu His Met Gln Ser Leu	
647 652 657 662	
agt cag caa gca ccc aaa act gct caa ctc agt tct aca gat tcc aca	2188
Ser Gln Gln Ala Pro Lys Thr Ala Gln Leu Ser Ser Thr Asp Ser Thr	
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gat ggc aac tta aat gaa ctt cac att aca ata aga tgt tgc aac cac	2236
Asp Gly Asn Leu Asn Glu Leu His Ile Thr Ile Arg Cys Cys Asn His	
679 684 689 694	
ctg cag tcc cga gca agc cac ctg cag cca cac cca tat gtt gtg tac	2284
Leu Gln Ser Arg Ala Ser His Leu Gln Pro His Pro Tyr Val Val Tyr	
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Lys Phe Phe Asp Phe Ala Asp His Asp Thr Ala Ile Ile Pro Ser Ser	
711 716 721 726	
aat gat cca cag ttt gat gat cat atg tat ttc cca gtg cca atg aat	2380
Asn Asp Pro Gln Phe Asp Asp His Met Tyr Phe Pro Val Pro Met Asn	
727 732 737 742	
atg gac ttg gat cga tac ctt aag tca gag tct ctg agt ttt tat gtt	2428
Met Asp Leu Asp Arg Tyr Leu Lys Ser Glu Ser Leu Ser Phe Tyr Val	
743 748 753 758	
ttt gat gat agt gat acc cag gag aat att tac ata gga aaa gtc aat	2476
Phe Asp Asp Ser Asp Thr Gln Glu Asn Ile Tyr Ile Gly Lys Val Asn	
759 764 769 774	
gtg cct ctg att tcg ttg gca cat gac agg tgt atc tca gga ata ttt	2524
Val Pro Leu Ile Ser Leu Ala His Asp Arg Cys Ile Ser Gly Ile Phe	
775 780 785 790	
gag tta aca gac cat caa aag cat cct gct ggc acc atc cat gtt ata	2572
Glu Leu Thr Asp His Gln Lys His Pro Ala Gly Thr Ile His Val Ile	
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Glu Asp Leu Gly Asn Phe Ile Arg Ser Glu Glu Pro Glu Val Val Gln	
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Arg Leu Pro Pro Ala Ser Ser Val Ser Thr Leu Val Leu Ala Pro Arg	
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Pro Lys Pro Arg Gln Arg Leu Thr Pro Val Asp Lys Lys Val Ser Phe	
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Val Asp Ile Met Pro His Gln Ser Asp Val Ser Gln Glu Gly Ser Val	
871 876 881 886	
gat gag gta aaa gag aat act gag aaa atg cag caa gga aaa gat gat	2860
Asp Glu Val Lys Glu Asn Thr Glu Lys Met Gln Gln Gly Lys Asp Asp	
887 892 897 902	
gtg tct tta cta tct gaa ggt cag ctt gca gaa caa agc ttg gca tct	2908
Val Ser Leu Leu Ser Glu Gly Gln Leu Ala Glu Gln Ser Leu Ala Ser	
903 908 913 918	
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Ser Glu Asp Glu Thr Glu Ile Thr Glu Asp Leu Glu Pro Glu Val Glu	
919 924 929 934	
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Glu Asp Met Ser Ala Ser Asp Ser Asp Asp Cys Ile Ile Pro Gly Pro	
935 940 945 950	
atc tcc aag aat atc aaa cag cca tca gaa aaa att cgg att gag atc	3052
Ile Ser Lys Asn Ile Lys Gln Pro Ser Glu Lys Ile Arg Ile Glu Ile	
951 956 961 966	
ata gct cta agc ctt aat gat tct caa gta acc atg gat gac act atc	3100
Ile Ala Leu Ser Leu Asn Asp Ser Gln Val Thr Met Asp Asp Thr Ile	
967 972 977 982	
caa cgg ctg ttt gtt gag tgt cga ttc tac agt ctt cct gct gaa gag	3148
Gln Arg Leu Phe Val Glu Cys Arg Phe Tyr Ser Leu Pro Ala Glu Glu	
983 988 993 998	
aca ccc gtg tca ctt cca aaa ccc aag agt ggg cag tgg gtc tac tat	3196
Thr Pro Val Ser Leu Pro Lys Pro Lys Ser Gly Gln Trp Val Tyr Tyr	
999 1004 1009 1014	
aac tat agc aat gtg atc tac gtg gat aaa gaa aac aac aaa gca aag	3244
Asn Tyr Ser Asn Val Ile Tyr Val Asp Lys Glu Asn Asn Lys Ala Lys	
1015 1020 1025 1030	
aga gac atc tta aaa gct ata cta caa aaa caa gag atg cct aat aga	3292

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agacttctaa gattggagct gcagaagact tgccagccca ccagcaca atg tca gga	177
	Met Ser Gly
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Ser His Thr Pro Ala Cys Gly Pro Phe Ser Ala Leu Thr Pro Ser Ile	
4 9 14 19	
tgg ccc cag gag atc ttg gcc aag tac acg cag aag gaa gag tca gca	273
Trp Pro Gln Glu Ile Leu Ala Lys Tyr Thr Gln Lys Glu Glu Ser Ala	
20 25 30 35	
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Glu Gln Pro Glu Phe Tyr Tyr Asp Glu Phe Gly Phe Arg Val Tyr Lys	
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Glu Glu Gly Asp Glu Pro Gly Ser Ser Leu Leu Ala Asn Ser Pro Leu	
52 57 62 67	

Leu	Leu	Asp	Phe	Glu	Arg	His	Asp	Asp	Asp	Glu	Leu	Gly	Phe	Arg	Lys	
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ggg	gag	ctc	aac	ggc	ctg	cga	ggc	tgg	ttt	cca	gcc	aag	ttc	gtg	gaa	1857
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Val	Leu	Asp	Glu	Arg	Ser	Lys	Glu	Tyr	Ser	Ile	Ala	Gly	Asp	Asp	Ser	
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596					601					606					611	
ggc	gcc	tgc	cac	ccc	tgg	ctg	ttt	atc	gag	gag	gct	gca	ggc	cgg	gag	2049
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612					617					622					627	
gtc	gag	aga	gac	ttt	gcc	tcc	gtg	tat	tcc	cgt	ctg	gtg	ctc	tgt	aag	2097
Val	Glu	Arg	Asp	Phe	Ala	Ser	Val	Tyr	Ser	Arg	Leu	Val	Leu	Cys	Lys	
628					633					638					643	
acc	ttc	agg	ttg	gat	gaa	gat	ggc	aaa	gtc	ctg	acc	ccg	gag	gag	ctg	2145
Thr	Phe	Arg	Leu	Asp	Glu	Asp	Gly	Lys	Val	Leu	Thr	Pro	Glu	Glu	Leu	
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Leu	Tyr	Arg	Ala	Val	Gln	Ser	Val	Asn	Val	Thr	His	Asp	Ala	Val	His	
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gca	caa	atg	gat	gtg	aag	ctc	cgc	tca	ctg	atc	tgc	gtg	ggg	ctc	aat	2241
Ala	Gln	Met	Asp	Val	Lys	Leu	Arg	Ser	Leu	Ile	Cys	Val	Gly	Leu	Asn	
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Glu	Gln	Val	Leu	His	Leu	Trp	Leu	Glu	Val	Leu	Cys	Ser	Ser	Leu	Pro	
692					697					702					707	
acc	gtg	gag	aag	tgg	tac	cag	ccc	tgg	tcc	ttc	ctg	cgc	agc	ccg	ggc	2337
Thr	Val	Glu	Lys	Trp	Tyr	Gln	Pro	Trp	Ser	Phe	Leu	Arg	Ser	Pro	Gly	
708					713					718					723	
tgg	gtc	cag	atc	aag	tgt	gag	ctc	cga	gtc	ctc	tgc	tgc	ttt	gcc	ttc	2385
Trp	Val	Gln	Ile	Lys	Cys	Glu	Leu	Arg	Val	Leu	Cys	Cys	Phe	Ala	Phe	
724					729					734					739	
agc	ctc	tcc	cag	gac	tgg	gag	ctc	cct	gcg	aag	aga	gag	gcg	cag	cag	2433
Ser	Leu	Ser	Gln	Asp	Trp	Glu	Leu	Pro	Ala	Lys	Arg	Glu	Ala	Gln	Gln	

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Pro Leu Lys Glu Gly Val Arg Asp Met Leu Val Lys His His Leu Phe				
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Ser Trp Asp Val Asp Gly *				
772	777			
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agacttctaa gattggagct gcagaagact tgccagccca ccagcaca atg tca gga	177
Met Ser Gly	
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agc cat aca cct gcc tgt ggc cct ttc tca gcc ctg act ccg agc ata	225
Ser His Thr Pro Ala Cys Gly Pro Phe Ser Ala Leu Thr Pro Ser Ile	
4 9 14 19	

tgg ccc cag gag atc ttg gcc aag tac acg cag aag gaa gag tca gca	273
Trp Pro Gln Glu Ile Leu Ala Lys Tyr Thr Gln Lys Glu Glu Ser Ala	
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Glu Gln Pro Glu Phe Tyr Tyr Asp Glu Phe Gly Phe Arg Val Tyr Lys	
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Glu Glu Gly Asp Glu Pro Gly Ser Ser Leu Leu Ala Asn Ser Pro Leu	
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Met Glu Asp Ala Pro Gln Arg Leu Arg Trp Gln Ala His Leu Glu Phe	
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Thr His Asn His Asp Val Gly Asp Leu Thr Trp Asp Lys Ile Ala Val	
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Ser Leu Pro Arg Ser Glu Lys Leu Arg Ser Leu Val Leu Ala Gly Ile	
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Pro His Gly Met Arg Pro Gln Leu Trp Met Arg Leu Ser Gly Ala Leu	
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Gln Lys Lys Arg Asn Ser Glu Leu Ser Tyr Arg Glu Ile Val Lys Asn	
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Ser Ser Asn Asp Glu Thr Ile Ala Ala Lys Gln Ile Glu Lys Asp Leu	
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Gly Val Pro Arg Leu Arg Arg Val Leu Arg Ala Leu Ala Trp Leu Tyr	
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Ala Leu Lys Ala Lys Asn Ile Lys Gln Thr Glu Leu Val Ala Asp Leu	
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Gln Arg Asp His Glu Asn Tyr Val Ala Cys Ser Arg Ser His Arg Arg	
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Met Leu Arg Asn Glu Arg Gln Phe Lys Glu Glu Lys Leu Ala Glu	
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Gln Leu Lys Gln Ala Glu Glu Leu Arg Gln Tyr Lys Val Leu Val His	
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Ala Gln Glu Arg Glu Leu Thr Gln Leu Arg Glu Lys Leu Arg Glu Gly	
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Pro Asp Glu Pro Asp Lys Ser Gln Gly Gln Asp Leu Gln Glu Gln Leu	
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Ala Glu Gly Cys Arg Leu Ala Gln His Leu Val Gln Lys Leu Ser Pro	
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Lys Val Leu Glu Ser Ser Ser Pro Arg Glu Met Gln Lys Ala Glu Glu	
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Ser Lys Val Pro Glu Asp Ser Leu Glu Glu Cys Ala Ile Thr Cys Ser	
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Asn Ser His Gly Pro Cys Asp Ser Asn Gln Pro His Lys Asn Ile Lys	
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Tyr Ser Ser Thr Phe His Ser Leu Glu Glu Gln Gln Val Cys Met Ala				
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Val Asp Ile Gly Arg His Arg Trp Asp Gln Val Lys Lys Glu Asp His				
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Ile Glu Lys Tyr Gln Glu Val Glu Glu Asp Gln Asp Pro Ser Cys Pro				
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Arg Leu Ser Arg Glu Leu Leu Asp Glu Lys Glu Pro Glu Val Leu Gln				
624	629	634	639	
gac tca ctg ggt aga tgt tat tcg act cct tca ggt tat ctt gaa ctg				2087
Asp Ser Leu Gly Arg Cys Tyr Ser Thr Pro Ser Gly Tyr Leu Glu Leu				
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cct gac tta ggc cag ccc tac agc agt gct gtt tac tca ttg gag gaa				2135
Pro Asp Leu Gly Gln Pro Tyr Ser Ser Ala Val Tyr Ser Leu Glu Glu				
656	661	666	671	
cag tac ctt ggc ttg gct ctt gac gtg gac aga att aaa aag gac caa				2183
Gln Tyr Leu Gly Leu Ala Leu Asp Val Asp Arg Ile Lys Lys Asp Gln				
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gaa gag gaa gaa gac caa ggc cca cca tgc ccc agg ctc agc agg gag				2231
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688	693	698	703	
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Leu Leu Glu Val Val Glu Pro Glu Val Leu Gln Asp Ser Leu Asp Arg				
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Cys Tyr Ser Thr Pro Ser Ser Cys Leu Glu Gln Pro Asp Ser Cys Gln	
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Pro Tyr Gly Ser Ser Phe Tyr Ala Leu Glu Glu Lys His Val Gly Phe	
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Gln	Leu	Lys	Gln	Ala	Glu	Glu	Leu	Arg	Gln	Tyr	Lys	Val	Leu	Val	His	
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Ala	Gln	Glu	Arg	Glu	Leu	Thr	Gln	Leu	Arg	Glu	Lys	Leu	Arg	Glu	Gly	
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Arg	Asp	Ala	Ser	Arg	Ser	Leu	Asn	Glu	His	Leu	Gln	Ala	Leu	Leu	Thr	
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Pro	Asp	Glu	Pro	Asp	Lys	Ser	Gln	Gly	Gln	Asp	Leu	Gln	Glu	Gln	Leu	
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gct	gag	ggg	tgt	aga	ctg	gca	cag	cac	ctt	gtc	caa	aag	ctc	agc	cca	407
Ala	Glu	Gly	Cys	Arg	Leu	Ala	Gln	His	Leu	Val	Gln	Lys	Leu	Ser	Pro	
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Lys	Val	Leu	Glu	Ser	Ser	Ser	Pro	Arg	Glu	Met	Gln	Lys	Ala	Glu	Glu	
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Ser	Lys	Val	Pro	Glu	Asp	Ser	Leu	Glu	Glu	Cys	Ala	Ile	Thr	Cys	Ser	
128					133					138					143	
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Gly Cys Leu Glu Leu Thr Asp Ser Cys Gln Pro Tyr Arg Ser Ala Phe	
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Gln Tyr Leu Gly Leu Ala Leu Asp Val Asp Arg Ile Lys Lys Asp Gln	

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Asp Met Asp Glu Ile	Glu Lys Tyr Gln Glu	Val Glu Glu Asp Gln	Asp	
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Gln Gln Asn Lys Tyr Lys Tyr Glu Glu Cys Lys Asp Leu Ile Lys Phe				
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Val Asp Ile Gly Arg His Arg Trp Asp Gln Val Lys Lys Glu Asp His	
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gag gca aca ggt ccc agg ctc agc aga gag ctg ctg gat gag aaa ggg	1799
Glu Ala Thr Gly Pro Arg Leu Ser Arg Glu Leu Leu Asp Glu Lys Gly	
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Pro Glu Val Leu Gln Asp Ser Leu Asp Arg Cys Tyr Ser Thr Pro Ser	
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Gly Cys Leu Glu Leu Thr Asp Ser Cys Gln Pro Tyr Arg Ser Ala Phe	
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Tyr Val Leu Glu Gln Gln Arg Val Gly Leu Ala Val Asn Met Asp Glu	
592 597 602 607	
att gaa aag tac caa gaa gtg gaa gaa gac caa gac cca tca tgc ccc	1991
Ile Glu Lys Tyr Gln Glu Val Glu Glu Asp Gln Asp Pro Ser Cys Pro	
608 613 618 623	
agg ctc agc agg gag ctg ctg gat gag aaa gag cct gaa gtc ttg cag	2039
Arg Leu Ser Arg Glu Leu Leu Asp Glu Lys Glu Pro Glu Val Leu Gln	
624 629 634 639	
gac tca ctg gat aga tgt tat tca act cct tcc agt tgt ctt gaa cag	2087
Asp Ser Leu Asp Arg Cys Tyr Ser Thr Pro Ser Ser Cys Leu Glu Gln	
640 645 650 655	
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Pro Asp Ser Cys Gln Pro Tyr Gly Ser Ser Phe Tyr Ala Leu Glu Glu	
656 661 666 671	
aaa cat gtt ggc ttt tct ctt gac gtg gga gaa att gaa aag aag ggg	2183
Lys His Val Gly Phe Ser Leu Asp Val Gly Glu Ile Glu Lys Lys Gly	
672 677 682 687	
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Lys Gly Lys Lys Arg Arg Gly Arg Arg Ser Lys Lys Glu Arg Arg Arg	
688 693 698 703	
gga aga aaa gaa ggg gaa gaa gat caa aac cca cca tgc ccc agg ctc	2279
Gly Arg Lys Glu Gly Glu Glu Asp Gln Asn Pro Pro Cys Pro Arg Leu	
704 709 714 719	
agc agg gag ctg ctg gat gag aaa ggg cct gaa gtc ttg cag gac tca	2327

Ser	Arg	Glu	Leu	Leu	Asp	Glu	Lys	Gly	Pro	Glu	Val	Leu	Gln	Asp	Ser		
720					725					730					735		
ctg	gat	aga	tgt	tat	tca	act	cct	tca	ggg	tgt	ctt	gaa	ctg	act	gac		2375
Leu	Asp	Arg	Cys	Tyr	Ser	Thr	Pro	Ser	Gly	Cys	Leu	Glu	Leu	Thr	Asp		
736					741					746					751		
tca	tgc	cag	ccc	tac	aga	agt	gcc	ttt	tac	ata	ttg	gag	caa	cag	cgt		2423
Ser	Cys	Gln	Pro	Tyr	Arg	Ser	Ala	Phe	Tyr	Ile	Leu	Glu	Gln	Gln	Arg		
752					757					762					767		
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Val	Gly	Leu	Ala	Val	Asp	Met	Asp	Glu	Ile	Glu	Lys	Tyr	Gln	Glu	Val		
768					773					778					783		
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Glu	Glu	Asp	Gln	Asp	Pro	Ser	Cys	Pro	Arg	Leu	Ser	Gly	Glu	Leu	Leu		
784					789					794					799		
gat	gag	aaa	gag	cct	gaa	gtc	ttg	cag	gag	tca	ctg	gat	aga	tgc	tat		2567
Asp	Glu	Lys	Glu	Pro	Glu	Val	Leu	Gln	Glu	Ser	Leu	Asp	Arg	Cys	Tyr		
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Ser	Thr	Pro	Ser	Gly	Cys	Leu	Glu	Leu	Thr	Asp	Ser	Cys	Gln	Pro	Tyr		
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Arg	Ser	Ala	Phe	Tyr	Ile	Leu	Glu	Gln	Gln	Arg	Val	Gly	Leu	Ala	Val		
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gac	atg	gat	gaa	att	gaa	aag	tac	caa	gaa	gtg	gaa	gaa	gac	caa	gac		2711
Asp	Met	Asp	Glu	Ile	Glu	Lys	Tyr	Gln	Glu	Val	Glu	Glu	Asp	Gln	Asp		
848					853					858					863		
cca	tca	tgc	ccc	agg	ctc	agc	agg	gag	ctg	ctg	gat	gag	aaa	gag	cct		2759
Pro	Ser	Cys	Pro	Arg	Leu	Ser	Arg	Glu	Leu	Leu	Asp	Glu	Lys	Glu	Pro		
864					869					874					879		
gaa	gtc	ttg	cag	gac	tca	ctg	ggg	aga	tgt	tat	tgc	act	cct	tca	ggg		2807
Glu	Val	Leu	Gln	Asp	Ser	Leu	Gly	Arg	Cys	Tyr	Ser	Thr	Pro	Ser	Gly		
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tat	ctt	gaa	ctg	cct	gac	tta	ggc	cag	ccc	tac	agc	agt	gct	gtt	tac		2855
Tyr	Leu	Glu	Leu	Pro	Asp	Leu	Gly	Gln	Pro	Tyr	Ser	Ser	Ala	Val	Tyr		
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912					917					922					927		
aaa	aag	gac	caa	gaa	gag	gaa	gaa	gac	caa	ggc	cca	cca	tgc	ccc	agg		2951
Lys	Lys	Asp	Gln	Glu	Glu	Glu	Glu	Asp	Gln	Gly	Pro	Pro	Cys	Pro	Arg		
928					933					938					943		
ctc	agc	agg	gag	ctg	ctg	gag	gta	gta	gag	cct	gaa	gtc	ttg	cag	gac		2999
Leu	Ser	Arg	Glu	Leu	Leu	Glu	Val	Val	Glu	Pro	Glu	Val	Leu	Gln	Asp		

944	949	954	959	
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Ser Leu Asp Arg Cys Tyr Ser Thr Pro Ser Ser Cys Leu Glu Gln Pro				
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Asp Ser Cys Gln Pro Tyr Gly Ser Ser Phe Tyr Ala Leu Glu Glu Lys				
976	981	986	991	
cat gtt ggc ttt tct ctt gac gtg gga gaa att gaa aag aag ggg aag				3143
His Val Gly Phe Ser Leu Asp Val Gly Glu Ile Glu Lys Lys Gly Lys				
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ggg aag aaa aga agg gga aga aga tca aag aag gaa aga aga agg gga				3191
Gly Lys Lys Arg Arg Gly Arg Arg Ser Lys Lys Glu Arg Arg Arg Gly				
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Arg Lys Glu Gly Glu Glu Asp Gln Asn Pro Pro Cys Pro Arg Leu Asn				
1024	1029	1034	1039	
agc gtg ctg atg gaa gtg gaa gag cct gaa gtc tta cag gac tca ctg				3287
Ser Val Leu Met Glu Val Glu Glu Pro Glu Val Leu Gln Asp Ser Leu				
1040	1045	1050	1055	
gat gga tgt tat tgc act ccg tca atg tac ttt gaa cta cct gac tca				3335
Asp Gly Cys Tyr Ser Thr Pro Ser Met Tyr Phe Glu Leu Pro Asp Ser				
1056	1061	1066	1071	
ttc cag cac tac aga agt gtg ttt tac tca ttt gag gaa cag cac atc				3383
Phe Gln His Tyr Arg Ser Val Phe Tyr Ser Phe Glu Glu Gln His Ile				
1072	1077	1082	1087	
agc ttc gcc ctt tac gtg gac aat agg ttt ttt act ttg acg gtg aca				3431
Ser Phe Ala Leu Tyr Val Asp Asn Arg Phe Phe Thr Leu Thr Val Thr				
1088	1093	1098	1103	
agt ctc cac ctg gtg ttc cag atg gga gtc ata ttc cca caa taa gca				3479
Ser Leu His Leu Val Phe Gln Met Gly Val Ile Phe Pro Gln *				
1104	1109	1114		
gcccttacta agccgagaga tgtcattcct gcaggcagga cctataggca cgtgaagatt				3539
tgaatgaaag tacagttcca tttggaagcc cagacatagg atgggtcagt gggcatggct				3599
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<212> DNA
<213> Homo sapiens

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g atg ctg gtg gtg gag gtg gcg aac ggc cgc tcc ctg gtg tgg gga 166
Met Leu Val Val Glu Val Ala Asn Gly Arg Ser Leu Val Trp Gly
1 5 10
gcc gag gcg gtg cag gcc ctc cgg gag cgc ctg ggt gtg ggg ggc cgc 214
Ala Glu Ala Val Gln Ala Leu Arg Glu Arg Leu Gly Val Gly Gly Arg
16 21 26 31
acg gta ggc gcc ctg ccc cgc ggg ccc cgc cag aac tcg cgc ctg ggc 262
Thr Val Gly Ala Leu Pro Arg Gly Pro Arg Gln Asn Ser Arg Leu Gly
32 37 42 47
ctc ccg ctg ctg ctg atg ccc gaa gag gcg cgg ctc ttg gcc gag atc 310
Leu Pro Leu Leu Leu Met Pro Glu Glu Ala Arg Leu Leu Ala Glu Ile
48 53 58 63
ggc gcc gtg act ctg gtc agc gcc ccg cgt cca gac tct cgg cac cac 358
Gly Ala Val Thr Leu Val Ser Ala Pro Arg Pro Asp Ser Arg His His
64 69 74 79
agc ctg gcc ctg aca tcc ttc aag cgc cag caa gag gag agc ttc cag 406

Ser	Leu	Ala	Leu	Thr	Ser	Phe	Lys	Arg	Gln	Gln	Glu	Glu	Ser	Phe	Gln	
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gag	cag	agc	gcc	ttg	gca	gct	gag	gcc	cgg	gag	acc	cgt	cgt	cag	gag	454
Glu	Gln	Ser	Ala	Leu	Ala	Ala	Glu	Ala	Arg	Glu	Thr	Arg	Arg	Gln	Glu	
96					101					106					111	
ctc	ctg	gag	aag	att	acg	gag	ggc	cag	gct	gct	aag	aag	cag	aaa	cta	502
Leu	Leu	Glu	Lys	Ile	Thr	Glu	Gly	Gln	Ala	Ala	Lys	Lys	Gln	Lys	Leu	
112					117					122					127	
gaa	cag	gct	tca	ggg	gcc	agc	tca	agc	cag	gag	gcc	ggc	tcg	agc	cag	550
Glu	Gln	Ala	Ser	Gly	Ala	Ser	Ser	Ser	Gln	Glu	Ala	Gly	Ser	Ser	Gln	
128					133					138					143	
gct	gcc	aaa	gag	gat	gag	acc	agt	gat	ggc	cag	gct	tcg	gga	gag	cag	598
Ala	Ala	Lys	Glu	Asp	Glu	Thr	Ser	Asp	Gly	Gln	Ala	Ser	Gly	Glu	Gln	
144					149					154					159	
gag	gaa	gct	ggc	ccc	tcg	tct	tcc	caa	gca	gga	ccc	tca	aat	ggg	gta	646
Glu	Glu	Ala	Gly	Pro	Ser	Ser	Ser	Gln	Ala	Gly	Pro	Ser	Asn	Gly	Val	
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gcc	ccc	ttg	ccc	aga	tct	gct	ctc	ctt	gtc	cag	ctg	gcc	act	gcc	agg	694
Ala	Pro	Leu	Pro	Arg	Ser	Ala	Leu	Leu	Val	Gln	Leu	Ala	Thr	Ala	Arg	
176					181					186					191	
cct	cga	ccg	gtc	aag	gcc	agg	ccc	ctg	gac	tgg	cgt	gtc	cag	tct	aaa	742
Pro	Arg	Pro	Val	Lys	Ala	Arg	Pro	Leu	Asp	Trp	Arg	Val	Gln	Ser	Lys	
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gac	tgg	ccc	cac	gcc	ggc	cgc	cct	gcc	cac	gag	ctg	cgc	tac	agt	atc	790
Asp	Trp	Pro	His	Ala	Gly	Arg	Pro	Ala	His	Glu	Leu	Arg	Tyr	Ser	Ile	
208					213					218					223	
tac	aga	gac	ctg	tgg	gag	cga	ggc	ttc	ttc	ctc	agt	gcg	gct	ggc	aag	838
Tyr	Arg	Asp	Leu	Trp	Glu	Arg	Gly	Phe	Phe	Leu	Ser	Ala	Ala	Gly	Lys	
224					229					234					239	
ttc	gga	ggt	gac	ttc	ctg	gtc	tat	cct	ggt	gac	ccc	ctc	cgc	ttc	cac	886
Phe	Gly	Gly	Asp	Phe	Leu	Val	Tyr	Pro	Gly	Asp	Pro	Leu	Arg	Phe	His	
240					245					250					255	
gcc	cat	tat	atc	gct	cag	tgc	tgg	gcc	ccc	gag	gac	acc	atc	cca	ctc	934
Ala	His	Tyr	Ile	Ala	Gln	Cys	Trp	Ala	Pro	Glu	Asp	Thr	Ile	Pro	Leu	
256					261					266					271	
caa	gac	ctg	gtt	gct	gct	ggg	cgc	ctt	gga	acc	agc	gtc	aga	aag	acc	982
Gln	Asp	Leu	Val	Ala	Ala	Gly	Arg	Leu	Gly	Thr	Ser	Val	Arg	Lys	Thr	
272					277					282					287	
ctg	ctc	ctc	tgt	tct	ccg	cag	cct	gat	ggt	aag	gtg	gtc	tac	acc	tcc	1030
Leu	Leu	Leu	Cys	Ser	Pro	Gln	Pro	Asp	Gly	Lys	Val	Val	Tyr	Thr	Ser	
288					293					298					303	
ctg	caa	tgg	gcc	agc	ctg	cag	tga	actccagaga	cctaggggat	gtggctgtgt						1084
Leu	Gln	Trp	Ala	Ser	Leu	Gln	*									

304

309

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 ttagtccttg tcatgctgcc aagtgaagg gcctttcc atg ctc aga atc acc 353
 Met Leu Arg Ile Thr
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atg aag acg aga gct atc tct ctt gct gca gac gcc acg gag ttt gtg 401
 Met Lys Thr Arg Ala Ile Ser Leu Ala Ala Asp Ala Thr Glu Phe Val
 6 11 16 21

cag ggg cgc agc gct cca gcc atg gcg cgt tcg ctc gtc cac gac acc 449
 Gln Gly Arg Ser Ala Pro Ala Met Ala Arg Ser Leu Val His Asp Thr
 22 27 32 37

gtg ttc tac tgc ctg agt gta tac cag gta aaa ata agc ccc aca cct 497
 Val Phe Tyr Cys Leu Ser Val Tyr Gln Val Lys Ile Ser Pro Thr Pro
 38 43 48 53

cag ctg ggg gca gca tca agc gca gaa ggc cat gtt ggc caa gga gct 545
 Gln Leu Gly Ala Ala Ser Ser Ala Glu Gly His Val Gly Gln Gly Ala
 54 59 64 69

cca ggc ctc atg ggt aat atg aac cct gag ggc ggt gtg aac cac gag 593
 Pro Gly Leu Met Gly Asn Met Asn Pro Glu Gly Gly Val Asn His Glu

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Asn Gly Met Asn Arg Asp Gly Gly Met Ile Pro Glu Gly Gly Gly Gly				
86	91	96	101	
aac cag gag cct cgg cag cag ccg cag ccc ccg ccg gag gag ccg gcc				689
Asn Gln Glu Pro Arg Gln Gln Pro Gln Pro Pro Pro Glu Glu Pro Ala				
102	107	112	117	
cag gcg gcc atg gag ggt ccg cag ccc gag aac atg cag cca cga act				737
Gln Ala Ala Met Glu Gly Pro Gln Pro Glu Asn Met Gln Pro Arg Thr				
118	123	128	133	
cgg cgc acg aag ttc acg ctg ttg cag gtg gag gag ctg gaa agt gtt				785
Arg Arg Thr Lys Phe Thr Leu Leu Gln Val Glu Glu Leu Glu Ser Val				
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ttc cga cac act caa tac cct gat gtg ccc aca aga agg gaa ctt gcc				833
Phe Arg His Thr Gln Tyr Pro Asp Val Pro Thr Arg Arg Glu Leu Ala				
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gaa aac tta ggt gtg act gaa gac aaa gtg cgg gtt tgg ttt aag aat				881
Glu Asn Leu Gly Val Thr Glu Asp Lys Val Arg Val Trp Phe Lys Asn				
166	171	176	181	
aaa agg gcc aga tgt agg cga cat cag aga gaa tta atg ctc gcc aat				929
Lys Arg Ala Arg Cys Arg Arg His Gln Arg Glu Leu Met Leu Ala Asn				
182	187	192	197	
gaa cta cgt gct gac cca gac gac tgt gtc tac atc gtc gtg gac tag				977
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cccgaagcg cgagcaaggc cgccagatgt gcaggcagcg gaggaggaga aagag atg	178
Met	
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Asp Leu Pro Asp Ser Ala Ser Arg Val Phe Cys Gly Arg Ile Leu Ser	
2 7 12 17	
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Met Val Asn Thr Asp Asp Val Asn Ala Ile Ile Leu Ala Gln Lys Asn	
18 23 28 33	
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Met Leu Asp Arg Phe Glu Lys Thr Asn Glu Met Leu Leu Asn Phe Asn	
34 39 44 49	
aac ctg tcc agt gcc cgc ctg cag cag atg agc gaa cgc ttc ctg cac	370
Asn Leu Ser Ser Ala Arg Leu Gln Gln Met Ser Glu Arg Phe Leu His	
50 55 60 65	
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His Thr Arg Thr Leu Val Glu Met Lys Arg Asp Leu Asp Ser Ile Phe	
66 71 76 81	
cgc cgt atc agg acg ctg aaa ggg aaa ctg gcc agg cag cac cca gag	466
Arg Arg Ile Arg Thr Leu Lys Gly Lys Leu Ala Arg Gln His Pro Glu	
82 87 92 97	
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Ala Phe Ser His Ile Pro Glu Ala Ser Phe Leu Glu Glu Glu Asp Glu	
98 103 108 113	
gac ccc atc cca ccc agc acc acg acc acc att gcc acc tca gaa cag	562
Asp Pro Ile Pro Pro Ser Thr Thr Thr Thr Ile Ala Thr Ser Glu Gln	
114 119 124 129	
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Ser Thr Gly Ser Cys Asp Thr Ser Pro Asp Thr Val Ser Pro Ser Leu	
130 135 140 145	
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Ser Pro Gly Phe Glu Asp Leu Ser His Val Gln Pro Gly Ser Pro Ala	
146 151 156 161	
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Ile Asn Gly Arg Ser Gln Thr Asp Asp Glu Glu Met Thr Gly Glu *	
162 167 172 177	
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aaacctttct	aatgcccata	accagacctc	agaccc	atg gag ccc acg aga gac		174
				Met Glu Pro Thr Arg Asp		
				1		

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Ile Asp Val Ser Asp Leu Arg Pro Val Pro Asp Asn Gln Glu Val Phe
23 28 '33 38

tgc cat ccc gtg acg gac cag agc ctg ata gtg gaa ctt ctc gag ctg 318
Cys His Pro Val Thr Asp Gln Ser Leu Ile Val Glu Leu Leu Glu Leu
39 44 49 54

cag gcc cac gta cgg ggc gaa gcg gct gcg cgg tac cac ttt gag gat 366
Gln Ala His Val Arg Gly Glu Ala Ala Ala Arg Tyr His Phe Glu Asp
55 60 65 70

ggt ggt ggc gtg cag ggg gct agg gct gtc cat gtg gag tct gtt cag 414
Val Gly Gly Val Gln Gly Ala Arg Ala Val His Val Glu Ser Val Gln
71 76 81 86

cct	ctc	agt	ttg	gag	aac	ctg	gcc	ctg	agg	ggc	cgc	tgt	caa	gaa	gcc	462
Pro	Leu	Ser	Leu	Glu	Asn	Leu	Ala	Leu	Arg	Gly	Arg	Cys	Gln	Glu	Ala	
87					92					97					102	

tgg gtc ctc tct ggc aag cag cag ata gct aag gaa aac cag cag gta 510
 Trp Val Leu Ser Gly Lys Gln Gln Ile Ala Lys Glu Asn Gln Gln Val
 103 108 113 118

gca aag gac gtg aca ctt cat cag gcc ttg ctg agg ctg ccc cag tac 558
Ala Lys Asp Val Thr Leu His Gln Ala Leu Leu Arg Leu Pro Gln Tyr
119 124 129 134

cag act gat ctc ttg ctt acc ttc aat cag ccc ccc cct gac aac agg 606
Gln Thr Asp Leu Leu Leu Thr Phe Asn Gln Pro Pro Pro Asp Asn Arg
135 140 145 150 1

tca tct ctt ggc ccc gaa aat ctg tca cct gca ccc tgg agc ctg ggt 654
Ser Ser Leu Gly Pro Glu Asn Leu Ser Pro Ala Pro Trp Ser Leu Gly

151	156	161	166	
gac ttt gaa cag ctg gtg acc agt ctg acc ctt cac gat cct aac atc				702
Asp Phe Glu Gln Leu Val Thr Ser Leu Thr Leu His Asp Pro Asn Ile				
167	172	177	182	
ttt ggt ccc cag taa aggcgctgaa gcactgcatg atgttgctga gaacttgggg				757
Phe Gly Pro Gln *				
183				
actcggttct gtgaggggga aaagaggttg aaaagagggt ttcctcttat ttcttcctg				817
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Met Ile Arg Arg Val Leu Pro	
1 5	
cac ggc atg ggc cgg ggc ctc ttg acc cgg agg cca ggc acg cgc aga	161
His Gly Met Gly Arg Gly Leu Leu Thr Arg Arg Pro Gly Thr Arg Arg	
8 13 18 23	
gga ggc ttt tct ctg gac tgg gat gga aag gtg tct gag att aag aag	209
Gly Gly Phe Ser Leu Asp Trp Asp Gly Lys Val Ser Glu Ile Lys Lys	
24 29 34 39	
aag atc aag tcg atc ctg cct gga agg tcc tgt gat cta ctg caa gac	257
Lys Ile Lys Ser Ile Leu Pro Gly Arg Ser Cys Asp Leu Leu Gln Asp	
40 45 50 55	
acc agc cac ctg cct ccc gag cac tcg gat gtg gtg atc gtg gga ggt	305
Thr Ser His Leu Pro Pro Glu His Ser Asp Val Val Ile Val Gly Gly	
56 61 66 71	
ggg gtg ctt ggc ttg tct gtg gcc tat tgg ctg aag aag ctg gag agc	353
Gly Val Leu Gly Leu Ser Val Ala Tyr Trp Leu Lys Lys Leu Glu Ser	
72 77 82 87	
aga cga ggt gct att cga gtg cta gtg gtg gaa cgg gac cac acg tat	401
Arg Arg Gly Ala Ile Arg Val Leu Val Val Glu Arg Asp His Thr Tyr	

gtg tgg cac tgc ccc cag gga cca ggc cta gag act ccg ctt gtt gca	1121
Val Trp His Cys Pro Gln Gly Pro Gly Leu Glu Thr Pro Leu Val Ala	
328 333 338 343	
gac acc agt gga gcc tat ttt cgc cgg gaa gga tta ggt agc aac tac	1169
Asp Thr Ser Gly Ala Tyr Phe Arg Arg Glu Gly Leu Gly Ser Asn Tyr	
344 349 354 359	
cta ggt ggt cgt agc ccc act gag cag gaa gaa ccg gac ccg gcg aac	1217
Leu Gly Gly Arg Ser Pro Thr Glu Gln Glu Glu Pro Asp Pro Ala Asn	
360 365 370 375	
ctg gaa gtg gac cat gat ttc ttc cag gac aag gtg tgg ccc cat ttg	1265
Leu Glu Val Asp His Asp Phe Phe Gln Asp Lys Val Trp Pro His Leu	
376 381 386 391	
gcc ctg agg gtc cca gct ttt gag act ctg aag gtt cag agc gcc tgg	1313
Ala Leu Arg Val Pro Ala Phe Glu Thr Leu Lys Val Gln Ser Ala Trp	
392 397 402 407	
gcc ggc tat tac gac tac aac acc ttt gac cag aat ggc gtg gtg ggc	1361
Ala Gly Tyr Tyr Asp Tyr Asn Thr Phe Asp Gln Asn Gly Val Val Gly	
408 413 418 423	
ccc cac ccg cta gtt gtc aac atg tac ttt gct act ggc ttc agt ggt	1409
Pro His Pro Leu Val Val Asn Met Tyr Phe Ala Thr Gly Phe Ser Gly	
424 429 434 439	
cac ggg ctc cag cag gcc cct ggc att ggg cga gct gta gca gag atg	1457
His Gly Leu Gln Gln Ala Pro Gly Ile Gly Arg Ala Val Ala Glu Met	
440 445 450 455	
gta ctg aag ggc agg ttc cag acc atc gac ctg agc ccc ttc ctc ttt	1505
Val Leu Lys Gly Arg Phe Gln Thr Ile Asp Leu Ser Pro Phe Leu Phe	
456 461 466 471	
acc cgc ttt tac ttg gga gag aag atc cag gag aac aac atc atc tga	1553
Thr Arg Phe Tyr Leu Gly Glu Lys Ile Gln Glu Asn Asn Ile Ile *	
472 477 482 487	
gcatgtgtgc tctgcactgg ctccactggc ttgcatcctg gctgtgttca cagccttggt	1613
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ggagggttgag gcaggaagat cacttgagcc caggagtttg aggttgccagt gagctatgat      180
tgtgccactg tattccagcc tgggcagcag agtgagatgc tatttcaaaa aaataaagta      240
aattaaaaaa aaataagagc ctttgatggc aaatgttaga aaaatatgta aataaaaaaca      300
ttggcacttt taaataggtc atcctgtccc aaagaggtag tgtttccccc aatacccaca      360
gcccctcaca caggcgtgtg cgcacacact cacggctcat ggatcctgtt ttggtgaacc      420
ggactgactt cttcttgcct gccactccag gtg atg atg acc aaa cgg acc aaa      474
                               Met Met Thr Lys Arg Thr Lys
                               1               5

gac atg ggc aag ttc agt tct gtc acc gtg tct acc att gat gaa gag      522
Asp Met Gly Lys Phe Ser Ser Val Thr Val Ser Thr Ile Asp Glu Glu
   8               13               18               23

gaa gag gag att gag gct agg gaa gtt gct gac tca tat gca cag aat      570
Glu Glu Glu Ile Glu Ala Arg Glu Val Ala Asp Ser Tyr Ala Gln Asn
  24               29               34               39

gcc aaa gtg att gaa aaa cag ctg gag cgc aaa ggc atg agc aag agg      618
Ala Lys Val Ile Glu Lys Gln Leu Glu Arg Lys Gly Met Ser Lys Arg
  40               45               50               55

cga ctg caa gag ctg gct gaa ttg gaa gcc aag aaa gcg aaa atg aag      666
Arg Leu Gln Glu Leu Ala Glu Leu Glu Ala Lys Lys Ala Lys Met Lys
  56               61               66               71

ggg acc ttg att gac aac cag ttc aaa taa c caggcctttt tctaagccct      717
Gly Thr Leu Ile Asp Asn Gln Phe Lys *
  72               77

agactagagg caagcattta gatcaggagg caaagtaatt tcttgattac atagacggat      777
tcctatttat gccctagcag aaggctttac gttgtttccc attgattctc ctacattcag      837
tgaggctttt aactgagtcc atttaacttg ctttcttttt ttttttggaa acaaagcttt      897

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Met
1

gcg ttg ctg gtg cga gtc ctt agg aac cag act agc att tct cag tgg 164
Ala Leu Leu Val Arg Val Leu Arg Asn Gln Thr Ser Ile Ser Gln Trp
2 7 12 17

gtt cca gta tgc agc cga ttg ata cct gtg tct cct acc caa gga cag 212
Val Pro Val Cys Ser Arg Leu Ile Pro Val Ser Pro Thr Gln Gly Gln
18 23 28 33

ggg gac agg gct ctg tct cgc act tcc cag tgg ccc cag atg agc cag 260
Gly Asp Arg Ala Leu Ser Arg Thr Ser Gln Trp Pro Gln Met Ser Gln
34 39 44 49

tcc cga gca tgt ggt gga tca gaa cag att cct gga ata gac ata cag 308
Ser Arg Ala Cys Gly Gly Ser Glu Gln Ile Pro Gly Ile Asp Ile Gln
50 55 60 65

ctg aat agg aag tat cac acc aca cgt aag ctt tct act acc aaa gat 356
Leu Asn Arg Lys Tyr His Thr Thr Arg Lys Leu Ser Thr Thr Lys Asp
66 71 76 81

tcc cca cag cct gtt gag gag aag gtt ggt gct ttc aca aag ata ata 404
Ser Pro Gln Pro Val Glu Glu Lys Val Gly Ala Phe Thr Lys Ile Ile
82 87 92 97

gaa gcc atg gga ttc acg gga cct ttg aaa tac agt aaa tgg aag att 452
Glu Ala Met Gly Phe Thr Gly Pro Leu Lys Tyr Ser Lys Trp Lys Ile
98 103 108 113

aag att gcg gcc ctg cgc atg tat act agc tgt gtg gag aaa act gac 500
Lys Ile Ala Ala Leu Arg Met Tyr Thr Ser Cys Val Glu Lys Thr Asp
114 119 124 129

ttc gag gaa ttc ttt cta agg tgt cag atg cct gat aca ttc aat tca 548
Phe Glu Glu Phe Phe Leu Arg Cys Gln Met Pro Asp Thr Phe Asn Ser

130	135	140	145	
tgg ttt ctt ata acc cta ctc cac gtc tgg atg tgt cta gtc cga atg				596
Trp Phe Leu Ile Thr Leu Leu His Val Trp Met Cys Leu Val Arg Met				
146	151	156	161	
aag cag gaa ggc cgg agt ggg aag tac atg tgt cgt atc ata gtt cat				644
Lys Gln Glu Gly Arg Ser Gly Lys Tyr Met Cys Arg Ile Ile Val His				
162	167	172	177	
ttt atg tgg gag gat gtt cag cag cgc ggc aga gtc atg ggg gtt aat				692
Phe Met Trp Glu Asp Val Gln Gln Arg Gly Arg Val Met Gly Val Asn				
178	183	188	193	
ccc tat atc ctg aag aag aac atg atc ctc atg aca aat cat ttc tat				740
Pro Tyr Ile Leu Lys Lys Asn Met Ile Leu Met Thr Asn His Phe Tyr				
194	199	204	209	
gca gcg atc ttg gga tat gat gag ggg atc ctt tca gat gat cat ggg				788
Ala Ala Ile Leu Gly Tyr Asp Glu Gly Ile Leu Ser Asp Asp His Gly				
210	215	220	225	
ctg gcc gct gcc ctc tgg aga acc ttc ttc aac cgg aaa tgt gaa gac				836
Leu Ala Ala Ala Leu Trp Arg Thr Phe Phe Asn Arg Lys Cys Glu Asp				
226	231	236	241	
cct cga cat ctt gaa ttg ctg gta gag tat gtg agg aaa cag ata cag				884
Pro Arg His Leu Glu Leu Leu Val Glu Tyr Val Arg Lys Gln Ile Gln				
242	247	252	257	
tac ctg gac tcc atg aac ggg gag gat ctg ctt ctg aca ggg gag gtg				932
Tyr Leu Asp Ser Met Asn Gly Glu Asp Leu Leu Leu Thr Gly Glu Val				
258	263	268	273	
agc tgg cgc cct cta gtg gag aag aat cct cag agc atc ctg aag ccc				980
Ser Trp Arg Pro Leu Val Glu Lys Asn Pro Gln Ser Ile Leu Lys Pro				
274	279	284	289	
cat tct ccg act tac aac gac gag gga ctt tga tgggctgg gccctccgca				1031
His Ser Pro Thr Tyr Asn Asp Glu Gly Leu *				
290	295	300		
cgccccgcca gctggcttcg aggaacctcc aggagagaag tgcctgttgg tccaggaccc				1091
tgcagaaagt ggctgaact gacctctgaa cagcatctgt caaataacctg gccccatttg				1151
tggtgagttt cctcttagtg tgcccaggag tctgatctgc tggggtacag ggctgggaga				1211
accctagct ctcccggggt gtcctctccc ttaggggaag ccccgagtga gagtcccca				1271
gcacacactc cccaaccccc tccagcaact acatgtgact gatagctttt cccaaaggcc				1331
aaggaaggga tgggtgtaggt tcaaaaggga aacccccag ggctgctgt ggctaggag				1391
cagattgtaa tgctgccgag tccggctcgg gaccacgcgt tgtccctcgg ctttcagcca				1451
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ccctgccacc  atg acg gaa cag gcc atc tcc ttc gcc aaa gac ttc ttg      169
              Met Thr Glu Gln Ala Ile Ser Phe Ala Lys Asp Phe Leu
                1              5              10

gcc gga ggc atc gcc gcc gcc atc tcc aag acg gcc gtg gct ccg atc      217
Ala Gly Gly Ile Ala Ala Ala Ile Ser Lys Thr Ala Val Ala Pro Ile
  14              19              24              29

gag cgg gtc aag ctg ctg ctg cag gtc cag cac gcc agc aag cag atc      265
Glu Arg Val Lys Leu Leu Leu Gln Val Gln His Ala Ser Lys Gln Ile
  30              35              40              45

gcc gcc gac aag cag tac aag ggc atc gtg gac tgc att gtc cgc atc      313
Ala Ala Asp Lys Gln Tyr Lys Gly Ile Val Asp Cys Ile Val Arg Ile
  46              51              56              61

ccc aag gag cag ggc gtg ctg tcc ttc tgg agg ggc aac ctt gcc aac      361
Pro Lys Glu Gln Gly Val Leu Ser Phe Trp Arg Gly Asn Leu Ala Asn
  62              67              72              77

gtc att cgc tac ttc ccc act caa gcc ctc aac ttc gcc ttc aag gat      409
Val Ile Arg Tyr Phe Pro Thr Gln Ala Leu Asn Phe Ala Phe Lys Asp
  78              83              88              93

aag tac aag cag atc ttc ctg ggg ggc gtg gac aag cac acg cag ttc      457
Lys Tyr Lys Gln Ile Phe Leu Gly Gly Val Asp Lys His Thr Gln Phe
  94              99              104              109

tgg agg tac ttt gcg ggc aac ctg gcc tcc ggc ggt gcg gcc ggc gcg      505
Trp Arg Tyr Phe Ala Gly Asn Leu Ala Ser Gly Gly Ala Ala Gly Ala
  110              115              120              125

acc tcc ctc tgc ttc gtg tac ccg ctg gat ttc gcc aga acc cgc ctg      553
Thr Ser Leu Cys Phe Val Tyr Pro Leu Asp Phe Ala Arg Thr Arg Leu
  126              131              136              141

gca gcg gac gtg gga aag tca ggc aca gag cgc gag ttc cga ggc ctg      601
Ala Ala Asp Val Gly Lys Ser Gly Thr Glu Arg Glu Phe Arg Gly Leu
  142              147              152              157

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gga gac tgc ctg gtg aag atc acc aag tcc gac ggc atc cgg ggc ctg	649
Gly Asp Cys Leu Val Lys Ile Thr Lys Ser Asp Gly Ile Arg Gly Leu	
158 163 168 173	
tac cag ggc ttc agt gtc tcc gtg cag ggc atc atc atc tac cgg gcg	697
Tyr Gln Gly Phe Ser Val Ser Val Gln Gly Ile Ile Ile Tyr Arg Ala	
174 179 184 189	
gcc tac ttc ggc gtg tac gat acg gcc aag ggc atg ctc ccc gac ccc	745
Ala Tyr Phe Gly Val Tyr Asp Thr Ala Lys Gly Met Leu Pro Asp Pro	
190 195 200 205	
aag aac acg cac atc gtg gtg agc tgg atg atc gcg cag acc gtg acg	793
Lys Asn Thr His Ile Val Val Ser Trp Met Ile Ala Gln Thr Val Thr	
206 211 216 221	
gcc gtg gcc ggc gtg gtg tcc tac ccc ttc gac acg gtg cgg cgg cgc	841
Ala Val Ala Gly Val Val Ser Tyr Pro Phe Asp Thr Val Arg Arg Arg	
222 227 232 237	
atg atg atg cag tcc ggg cgc aaa gga gct gac atc atg tac acg ggc	889
Met Met Met Gln Ser Gly Arg Lys Gly Ala Asp Ile Met Tyr Thr Gly	
238 243 248 253	
acc gtc gac tgt tgg agg aag atc ttc aga gat gag ggg ggc aag gcc	937
Thr Val Asp Cys Trp Arg Lys Ile Phe Arg Asp Glu Gly Gly Lys Ala	
254 259 264 269	
ttc ttc aag ggt gcg tgg tcc aac gtc ctg cgg ggc atg ggg ggc gcc	985
Phe Phe Lys Gly Ala Trp Ser Asn Val Leu Arg Gly Met Gly Gly Ala	
270 275 280 285	
ttc gtg ctg gtc ctg tac gac gag ctc aag aag gtg atc taa gggccgc	1034
Phe Val Leu Val Leu Tyr Asp Glu Leu Lys Lys Val Ile *	
286 291 296	
ggcctcctcc acacacacac acacaccagg ggaaccaaga gaaccacgta gaatcctcaa	1094
ccgtgcggaac catcaacctt cgagaaattc cagttgtctt tttcccagcc gcatcctgcc	1154
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<222> (169) .. (1134)

<400> 688

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tgactggacg caagtaactt ctaggtctgc agacaagagg aagagaag atg aag gaa	177
Met Lys Glu	
1	
gac tgt ctg ccg agt tct cac gtg ccc atc agt gac agc aag tcc att	225
Asp Cys Leu Pro Ser Ser His Val Pro Ile Ser Asp Ser Lys Ser Ile	
4 9 14 19	
cag aag tcg gag ctc tta ggc ctg ctg aaa acc tac aac tgc tac cat	273
Gln Lys Ser Glu Leu Leu Gly Leu Leu Lys Thr Tyr Asn Cys Tyr His	
20 25 30 35	
gag ggc aag agc ttc cag ctg aga cac cgt gag gaa gaa ggg act ctg	321
Glu Gly Lys Ser Phe Gln Leu Arg His Arg Glu Glu Glu Gly Thr Leu	
36 41 46 51	
atc atc gag ggg ctc ctc aac att gcc tgg ggg ctg agg cgg ccc atc	369
Ile Ile Glu Gly Leu Leu Asn Ile Ala Trp Gly Leu Arg Arg Pro Ile	
52 57 62 67	
cgg ctg cag atg cag gat gac cgg gag cag gtg cac ctc ccc tcc acc	417
Arg Leu Gln Met Gln Asp Asp Arg Glu Gln Val His Leu Pro Ser Thr	
68 73 78 83	
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Ser Trp Met Pro Arg Arg Pro Ser Cys Pro Leu Lys Glu Pro Ser Pro	
84 89 94 99	
cag aac ggg aac atc aca gcc cag ggg cca agc att cag cca gtg cac	513
Gln Asn Gly Asn Ile Thr Ala Gln Gly Pro Ser Ile Gln Pro Val His	
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aag gct gag agt tcc aca gac agc tcg ggg ccc ctg gag gag gca gag	561
Lys Ala Glu Ser Ser Thr Asp Ser Ser Gly Pro Leu Glu Glu Ala Glu	
116 121 126 131	
gag gcc ccc cag ctg atg cgg acc aag agc gac gcc agt tgc atg agc	609
Glu Ala Pro Gln Leu Met Arg Thr Lys Ser Asp Ala Ser Cys Met Ser	
132 137 142 147	
cag agg agg ccc aag tgc cgc gcc ccc ggt gag gcc cag cgc atc cgg	657
Gln Arg Arg Pro Lys Cys Arg Ala Pro Gly Glu Ala Gln Arg Ile Arg	
148 153 158 163	
cga cac cgg ttc tct atc aac ggc cac ttc tac aat cat aag acc tcc	705
Arg His Arg Phe Ser Ile Asn Gly His Phe Tyr Asn His Lys Thr Ser	
164 169 174 179	
gtg ttt act cca gcc tat gga tcc gtg acc aat gtg agg gtc aac agc	753
Val Phe Thr Pro Ala Tyr Gly Ser Val Thr Asn Val Arg Val Asn Ser	
180 185 190 195	
acc atg aca acc ctg cag gtg ctc acc ctg ctg ctg aac aaa ttt agg	801
Thr Met Thr Thr Leu Gln Val Leu Thr Leu Leu Leu Asn Lys Phe Arg	

196	201	206	211	
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Val Glu Asp Gly Pro Ser Glu Phe Ala Leu Tyr Ile Val His Glu Ser				
212	217	222	227	
ggg gag cgg aca aaa tta aaa gac tgc gag tac ccg ctg att tcc aga				897
Gly Glu Arg Thr Lys Leu Lys Asp Cys Glu Tyr Pro Leu Ile Ser Arg				
228	233	238	243	
atc ctg cat ggg cca tgt gag aag atc gcc agg atc ttc ctg atg gaa				945
Ile Leu His Gly Pro Cys Glu Lys Ile Ala Arg Ile Phe Leu Met Glu				
244	249	254	259	
gct gac ttg ggc gtg gaa gtc ccc cat gaa gtc gct cag tac att aag				993
Ala Asp Leu Gly Val Glu Val Pro His Glu Val Ala Gln Tyr Ile Lys				
260	265	270	275	
ttt gaa atg ccg gtg ctg gac agt ttt gtt gaa aaa tta aaa gaa gag				1041
Phe Glu Met Pro Val Leu Asp Ser Phe Val Glu Lys Leu Lys Glu Glu				
276	281	286	291	
gaa gaa aga gaa ata atc aaa ctg acc atg aag ttc caa gcc ctg cgt				1089
Glu Glu Arg Glu Ile Ile Lys Leu Thr Met Lys Phe Gln Ala Leu Arg				
292	297	302	307	
ctg acg atg ctg cag cgc ctg gag cag ctg gtg gag gcc aag taa ctg				1137
Leu Thr Met Leu Gln Arg Leu Glu Gln Leu Val Glu Ala Lys *				
308	313	318		
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cccgtggatg cctgtgtacc tcttgctttt tctgggcttg cgtttctctc ctctagtggg				1977

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gccaccatgc tgtgcggaac tgcgtcaggg caaatgtcac agcaggattt ccccaacca 2397
gctccatcat cacagacaca gagagctgca ggggaggcct gccactgtt ttgtcgactc 2457
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aaaaaaaaaa aa 2529

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<210> 689
<211> 495
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (14) .. (421)

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                      1             5             10

tct ctc gag gat ccg aat tcg cgg ccg tgt cga cgg acg gtc ccc agc      97
Ser Leu Glu Asp Pro Asn Ser Arg Pro Cys Arg Arg Thr Val Pro Ser
 13             18             23             28

aca cta gag gaa gtc gtg cta ccc ccg cgg agt tgt cgt gtg ttc tgg      145
Thr Leu Glu Glu Val Val Leu Pro Pro Arg Ser Cys Arg Val Phe Trp
 29             34             39             44

att cat tcc ggc acc acc atg tcg aag gtt tcc ttt aag atc acg ctg      193
Ile His Ser Gly Thr Thr Met Ser Lys Val Ser Phe Lys Ile Thr Leu
 45             50             55             60

acg tcg gac cca cgg ctg ccg tac aaa gta ctc agt gtt cct gaa agt      241
Thr Ser Asp Pro Arg Leu Pro Tyr Lys Val Leu Ser Val Pro Glu Ser
 61             66             71             76
|

aca cct ttc aca gca gtc tta aag ttt gca gca gaa gaa ttt aaa gtt      289
Thr Pro Phe Thr Ala Val Leu Lys Phe Ala Ala Glu Glu Phe Lys Val
 77             82             87             92

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cct gct gca aca agt gca att att acc aat gat gga ata gga ata aat	337
Pro Ala Ala Thr Ser Ala Ile Ile Thr Asn Asp Gly Ile Gly Ile Asn	
93 98 103 108	
cct gca cag act gct gga aat gtt ttt cta aaa cat ggt tca gaa ctg	385
Pro Ala Gln Thr Ala Gly Asn Val Phe Leu Lys His Gly Ser Glu Leu	
109 114 119 124	
cgg att att cct aga gat cgt gtt gga agt tgt taa tacc tgctacttgg	435
Arg Ile Ile Pro Arg Asp Arg Val Gly Ser Cys *	
125 130 135	
aacatacgat tgcctttcag aataaatatt ggtatttttt gtgtgtgtaa aaaaaaaaaa	495

<210> 690
 <211> 816
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (287)..(628)

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cgtgccgctg gctgggttac aacgcgatca ttcgtagttt tgtccatgaa gaccaggtct	180
tggccaactc caacactgcg ccttggcgcc gcaagctggc aaccggcggtt gccggtttca	240
tggaaggctt catgcactga ctcgttccac ccacagggga aaaccc atg agc atc	295
	Met Ser Ile
	1

atg caa ttc aaa gac acg ctg aac acc cca ctg cca gat tca tca ccg	343
Met Gln Phe Lys Asp Thr Leu Asn Thr Pro Leu Pro Asp Ser Ser Pro	
4 9 14 19	

gtg gcg gtg ccc ctg ggc gcg ccc atc gcc gtg gcc tcc acc ttg agc	391
Val Ala Val Pro Leu Gly Ala Pro Ile Ala Val Ala Ser Thr Leu Ser	
20 25 30 35	

gtg gag cac aac gat ggc gtc gag acc ggc atc tgg gcc tgc acc ccg	439
Val Glu His Asn Asp Gly Val Glu Thr Gly Ile Trp Ala Cys Thr Pro	
36 41 46 51	

ggg cgc tgg cgt cgg cag atc acg tcc cag gag ttt tgc cat ttc atc	487
Gly Arg Trp Arg Arg Gln Ile Thr Ser Gln Glu Phe Cys His Phe Ile	
52 57 62 67	

cag ggg cgc tgc acc ttc acg ccc gac gac ggg gaa acc ctg cac ata	535
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Gln	Gly	Arg	Cys	Thr	Phe	Thr	Pro	Asp	Asp	Gly	Glu	Thr	Leu	His	Ile	
68					73					78					83	
caa gcc ggt gac gca ctg atg ttg cca gcc aat agc acc ggt atc tgg																583
Gln	Ala	Gly	Asp	Ala	Leu	Met	Leu	Pro	Ala	Asn	Ser	Thr	Gly	Ile	Trp	
84					89					94					99	
gat atc cag gaa acc gtg cgc aag acc tat gtc ctg att ctg taa cgc																631
Asp	Ile	Gln	Glu	Thr	Val	Arg	Lys	Thr	Tyr	Val	Leu	Ile	Leu	*		
100					105					110						
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aaagccattg ccctgttgcc cttgatgttg gtggcctcta tcagccaggc cgccgagacc																751
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<210> 691
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 <212> DNA
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 <220>
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 <222> (376) .. (1596)

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tcttttgtca tgaggaagtg acggctgctg gagggagggtg aacaccacaa ggagagatgg																300
catctggcct gggccccgcc tagcagcagc tccacctcct aggccaggcc ctgtgggatg																360
cgccactaga ccacc atg gac gga tcc cac agc gca gcc ctg aag ctg cag																411
					Met	Asp	Gly	Ser	His	Ser	Ala	Ala	Leu	Lys	Leu	Gln
					1				5					10		
cag ctg cct ccc aca agt agc tcc agc gcc gta agc gag gcc tcc ttc																459
Gln	Leu	Pro	Pro	Thr	Ser	Ser	Ser	Ser	Ala	Val	Ser	Glu	Ala	Ser	Phe	
13					18				23					28		
tcc tac aag gaa aac ctg att ggc gcc ctc ttg gcg atc ttc ggg cac																507
Ser	Tyr	Lys	Glu	Asn	Leu	Ile	Gly	Ala	Leu	Leu	Ala	Ile	Phe	Gly	His	
29					34				39			/		44		
ctc gtg gtc agc att gca ctt aac ctc cag aag tac tgc cac atc cgc																555

[illegible]

tcc	tct	ttg	att	gcc	agt	gtg	ggc	tac	att	ctg	tcc	aca	acc	att	gct	1227
Ser	Ser	Leu	Ile	Ala	Ser	Val	Gly	Tyr	Ile	Leu	Ser	Thr	Thr	Ile	Ala	

269	274	279	284	
atc aca gca ggt gca ata ttt tac ctg gac ttc atc ggg gag gac gtg				1275
Ile Thr Ala Gly Ala Ile Phe Tyr Leu Asp Phe Ile Gly Glu Asp Val				
285	290	295	300	
ctg cac atc tgc atg ttt gca ctg ggg tgc ctc att gca ttc ttg ggc				1323
Leu His Ile Cys Met Phe Ala Leu Gly Cys Leu Ile Ala Phe Leu Gly				
301	306	311	316	
gtc ttc tta atc acg cgt aac agg aag aag ccc att cca ttt gag ccc				1371
Val Phe Leu Ile Thr Arg Asn Arg Lys Lys Pro Ile Pro Phe Glu Pro				
317	322	327	332	
tat att tcc atg gat gcc atg cca ggt atg cag aac atg cac gat aaa				1419
Tyr Ile Ser Met Asp Ala Met Pro Gly Met Gln Asn Met His Asp Lys				
333	338	343	348	
ggg atg act gtc cag cct gaa ctt aaa gct tct ttt tcc tat ggg gct				1467
Gly Met Thr Val Gln Pro Glu Leu Lys Ala Ser Phe Ser Tyr Gly Ala				
349	354	359	364	
ctg gaa aac aat gac aac att tct gag atc tac gct cct gcc acc ctg				1515
Leu Glu Asn Asn Asp Asn Ile Ser Glu Ile Tyr Ala Pro Ala Thr Leu				
365	370	375	380	
cca gtc atg caa gaa gag cac ggc tcc aga agt gcc tct ggg gtc ccc				1563
Pro Val Met Gln Glu Glu His Gly Ser Arg Ser Ala Ser Gly Val Pro				
381	386	391	396	
tac cga gtc cta gag cac acc aag aag gaa tga gactcgcc tccctctatt				1614
Tyr Arg Val Leu Glu His Thr Lys Lys Glu *				
397	402	407		
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<210> 692
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 <212> DNA
 <213> Homo sapiens

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<211> 2693

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

[illegible]

11

11

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Asp Phe His Ser Ser Ser Glu Phe Glu Ile Val Lys Ala Ile Lys Glu				
204	209	214	219	
aga gcc tgt tac cta tcc ata aac ccc caa aag gat gag acg cta gag				841
Arg Ala Cys Tyr Leu Ser Ile Asn Pro Gln Lys Asp Glu Thr Leu Glu				
220	225	230	235	
aca gag aaa gct cag tac tac ctg cct gat ggc agc acc att gag ata				889
Thr Glu Lys Ala Gln Tyr Tyr Leu Pro Asp Gly Ser Thr Ile Glu Ile				
236	241	246	251	
tct gca cct cag gag aga ctg tat tcc acg tgg att ggg ggc tcc atc				937
Ser Ala Pro Gln Glu Arg Leu Tyr Ser Thr Trp Ile Gly Gly Ser Ile				
252	257	262	267	
ctt gcc tcc ctg gac acc ttt aag aag atg tgg gtc tcc aaa aag gaa				985
Leu Ala Ser Leu Asp Thr Phe Lys Lys Met Trp Val Ser Lys Lys Glu				
268	273	278	283	
tat gag gaa gac ggt gcc cga tcc atc cac aga aaa acc ttc taa tgt				1033
Tyr Glu Glu Asp Gly Ala Arg Ser Ile His Arg Lys Thr Phe *				
284	289	294		
cgggacatca tcttcacctc tctctgaagt taactccact ttaaaactcg ctttcttgag				1093
tcggagtgtt tgcgaggaac tgccctgtgtg tgagtgcgtg tgtggatatg agtgtgtgcg				1153
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 <222> (358) .. (696)

<220>
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tgtccaaagc	agtcgtaaga
agaggtccca	atccccact
	180
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ctccagtttc	ggtaaaagtt
tcatttgatc	tgaatagtat
	240
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	300
caaggctccc	ttgccagcag
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gtcacgtgga	atttggga
	357
atg	tgg
aaa	gga
ggt	aga
agc	cat
cct	ttc
ctc	ccc
tgt	agc
agc	agg
	405
Met	Trp
Lys	Gly
Gly	Arg
Ser	His
Pro	Phe
Leu	Pro
Cys	Ser
Ser	Arg
1	5
	10
	15

cgt gca ggc tct ggt ggt cag ctg gac tcc ata ctc ccc cac cag tca	453
Arg Ala Gly Ser Gly Gly Gln Leu Asp Ser Ile Leu Pro His Gln Ser	
17 22 27 32	
cca gcc tgg gga ccg tgg ggc tgc aag gac ctc agc agc ggt gtc cca	501
Pro Ala Trp Gly Pro Trp Gly Cys Lys Asp Leu Ser Ser Gly Val Pro	
33 38 43 48	
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Ser Phe Leu Thr Ser Ser Ile Leu Trp Lys Ser Ala Val Phe Ala Glu	
49 54 59 64	
gat aat ggc ctc aag atc cat ccg tgt tcc tgc aaa aga cat gat ctc	597
Asp Asn Gly Leu Lys Ile His Pro Cys Ser Cys Lys Arg His Asp Leu	
65 70 75 80	
gct gtt ttt tat ggt tgc aca tct ttt gtt cta acg ttt ggt ctt tca	645
Ala Val Phe Tyr Gly Cys Thr Ser Phe Val Leu Thr Phe Gly Leu Ser	
81 86 91 96	
ccc tgg ttc ctg aca cag agc ttc cta aat ccc ttg gaa ttt tct ggg	693
Pro Trp Phe Leu Thr Gln Ser Phe Leu Asn Pro Leu Glu Phe Ser Gly	
97 102 107 112	
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cacctggggg ctgacatgcg gatggctctg tgtgactgag cccttaacct gtggagtctg	1230
gtgctcactc tgcttagggc ttctcttgcc tttttagtgt ccttctaggc ggccggacgc	1290
gtgggaggac gcgtgggtcg accgggaat tccggaccgg tactacaggc gatcgacnta	1350
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<222> (363)..(1988)

<400> 695

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gatttccact aagtgtcttc aaacctcccc ctccccggct tcctggataa tagaagttcc    180
cgaaggccgc cgattccaga agatactgtc tggcgtgaaa ttagtttcag tagaaacata    240
agtcccgccg gtcttgtgct gcgcgtgcgc aagcttttgg gccctcccga gaaaggggaag   300
tgcattttcg ctcccgtagc ggtttccgcc gggtgggggg aagtaattcc ggttgttgca    360

cc  atg gcg tcc atg ggg acc ctc gcc ttc gat gaa tat ggg cgc cct      407
    Met Ala Ser Met Gly Thr Leu Ala Phe Asp Glu Tyr Gly Arg Pro
      1             5             10

ttc ctc atc atc aag gat cag gac cgc aag tcc cgt ctt atg gga ctt      455
Phe Leu Ile Ile Lys Asp Gln Asp Arg Lys Ser Arg Leu Met Gly Leu
  16             21             26             31

gag gcc ctc aag tct cat ata atg gca gca aag gct gta gca aat aca      503
Glu Ala Leu Lys Ser His Ile Met Ala Ala Lys Ala Val Ala Asn Thr
  32             37             42             47

atg aga aca tca ctt gga cca aat ggg ctt gat aag atg atg gtg gat      551
Met Arg Thr Ser Leu Gly Pro Asn Gly Leu Asp Lys Met Met Val Asp
  48             53             58             63

aag gat gga gat gtg act gta act aat gat ggg gcc acc atc tta agc      599
Lys Asp Gly Asp Val Thr Val Thr Asn Asp Gly Ala Thr Ile Leu Ser
  64             69             74             79

atg atg gat gtt gat cat cag att gcc aag ctg atg gtg gaa ctg tcc      647
Met Met Asp Val Asp His Gln Ile Ala Lys Leu Met Val Glu Leu Ser
  80             85             90             95

aag tct cag gat gat gaa att gga gat gga acc aca gga gtg gtt gtc      695
Lys Ser Gln Asp Asp Glu Ile Gly Asp Gly Thr Thr Gly Val Val Val
  96             101            106            111

ctg gct ggt gcc ttg tta gaa gaa gcg gag caa ttg cta gac cga ggc      743
Leu Ala Gly Ala Leu Leu Glu Glu Ala Glu Gln Leu Leu Asp Arg Gly
 112             117            122            127

att cac cca atc aga ata gcc gat ggc tat gag cag gct gct cgc gtt      791
Ile His Pro Ile Arg Ile Ala Asp Gly Tyr Glu Gln Ala Ala Arg Val
 128             133            138            143

gct att gaa cac ctg gac aag atc agc gat agc gtc ctt gtt gac ata      839
Ala Ile Glu His Leu Asp Lys Ile Ser Asp Ser Val Leu Val Asp Ile
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Thr Ile Phe Ile Arg Gly Gly Asn Lys Met Ile Ile Glu Glu Ala Lys	
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cga tcc ctt cac gat gct ttg tgt gtc atc cgg aac ctc atc cgc gat	1607
Arg Ser Leu His Asp Ala Leu Cys Val Ile Arg Asn Leu Ile Arg Asp	
400 405 410 415	
aat cgt gtg gtg tat gga gga ggg gct gct gag ata tcc tgt gcc ctg	1655
Asn Arg Val Val Tyr Gly Gly Gly Ala Ala Glu Ile Ser Cys Ala Leu	
416 421 426 431	
gca gtt agc caa gag gcg gat aag tgc ccc acc tta gaa cag tat gcc	1703
Ala Val Ser Gln Glu Ala Asp Lys Cys Pro Thr Leu Glu Gln Tyr Ala	
432 437 442 447	
atg aga gcg ttt gcc gac gca ctg gag gtc atc ccc atg gcc ctc tct	1751
Met Arg Ala Phe Ala Asp Ala Leu Glu Val Ile Pro Met Ala Leu Ser	
448 453 458 463	
gaa aac agt ggc atg aat ccc atc cag act atg acc gaa gtc cga gcc	1799
Glu Asn Ser Gly Met Asn Pro Ile Gln Thr Met Thr Glu Val Arg Ala	
464 469 474 479	
aga cag gtg aag gag atg aac cct gct ctt ggc atc gac tgt ttg cac	1847
Arg Gln Val Lys Glu Met Asn Pro Ala Leu Gly Ile Asp Cys Leu His	
480 485 490 495	
aag ggg aca aat gat atg aag caa cag cat gtc ata gaa acc ttg att	1895
Lys Gly Thr Asn Asp Met Lys Gln Gln His Val Ile Glu Thr Leu Ile	
496 501 506 511	
ggc aaa aag caa cag ata tct ctt gca aca caa atg gtt aga atg att	1943
Gly Lys Lys Gln Gln Ile Ser Leu Ala Thr Gln Met Val Arg Met Ile	
512 517 522 527	
ttg aag att gat gac att cgt aag cct gga gaa tct gaa gaa tga aga	1991
Leu Lys Ile Asp Asp Ile Arg Lys Pro Gly Glu Ser Glu Glu *	
528 533 538	
cattgagaaa actatgtagc aagatccact tctgtgatta agtaaatgga tgtctcgtga	2051
tgcacctaca gttattttatt gttacatcct ttccagaca ctgtagatgc tataataaaa	2111
atagctgttt ggtaaccata gtttcacttg ttcaaagctg tgtaatcgtg ggggtaccat	2171
ctcaactgct tttgtattca ttgtattaaa agaatctgtt taaacaacct ttatcttctc	2231
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aaaa	2295

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gaaaagaaaa gtagctgcag tattcccca gcacttgctg agagcatgcc gtatgccagg      180
ctgtgaggct cgagagacaa gcagtggaag agttgcggcc tgtttcatct ctggattgta      240
aatctgagcc tccttctggc ccctggaagg ggacagcatc accatggaat gattcctaac      300
cagcataatg ctggagccgg gagccaccaa cctgcagttt tcagaatggc cgtgttggac      360
actgatttgg atcacattct tccatcttct gttcttcctc cattctgggc taagttagta      420
gtgggatcgg ttgccattgt gtgttttgca cgcagctatg atggagactt tgtctttgat      480
gactcagaag ctattgttaa caataaggta acaaggaggg agcgcattct tccaccttct      540
gggtgctgct gagtatcttt ctgggagcag tggcc    atg ctg tgc aaa gag caa      593
                                   Met Leu Cys Lys Glu Gln
                                   1

ggg atc act gtg ctg ggt tta aat gcg gta ttt gac atc ttg gtg ata      641
Gly Ile Thr Val Leu Gly Leu Asn Ala Val Phe Asp Ile Leu Val Ile
   7                12                17                22

ggc aaa ttc aat gtt ctg gaa att gtc cag aag gta cta cat aag gac      689
Gly Lys Phe Asn Val Leu Glu Ile Val Gln Lys Val Leu His Lys Asp
  23                28                33                38

aag tca tta gag aat ctc ggc atg ctc agg aac ggg ggc ctc ctc ttc      737
Lys Ser Leu Glu Asn Leu Gly Met Leu Arg Asn Gly Gly Leu Leu Phe
  39                44                49                54

aga atg acc ctg ctc acc tct gga ggg gct ggg atg ctc tac gtg cgc      785
Arg Met Thr Leu Leu Thr Ser Gly Gly Ala Gly Met Leu Tyr Val Arg
  55                60                65                70

tgg agg atc atg ggc acg ggc ccg ccg gcc ttc acc gag gtg gac aac      833
Trp Arg Ile Met Gly Thr Gly Pro Pro Ala Phe Thr Glu Val Asp Asn
  71                76                81                86

ccg gcc tcc ttt gct gac agc atg ctg gtg agg gcc gta aac tac aat      881
Pro Ala Ser Phe Ala Asp Ser Met Leu Val Arg Ala Val Asn Tyr Asn
  87                92                97                102

tac tac tat tca ttg aat gcc tgg ctg ctg ctg tgt ccc tgg tgg ctg      929
Tyr Tyr Tyr Ser Leu Asn Ala Trp Leu Leu Leu Cys Pro Trp Trp Leu

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103	108	113	118	
tgt ttt gat tgg tca atg ggc tgc atc ccc ctc att aag tcc atc agc				977
Cys Phe Asp Trp Ser Met Gly Cys Ile Pro Leu Ile Lys Ser Ile Ser				
119	124	129	134	
gac tgg agg gta att gca ctt gca gca ctc tgg ttc tgc cta att ggc				1025
Asp Trp Arg Val Ile Ala Leu Ala Ala Leu Trp Phe Cys Leu Ile Gly				
135	140	145	150	
ctg ata tgc caa gcc ctg tgc tct gaa gac ggc cac aag aga agg atc				1073
Leu Ile Cys Gln Ala Leu Cys Ser Glu Asp Gly His Lys Arg Arg Ile				
151	156	161	166	
ctt act ctg ggc ctg gga ttt ctc gtt atc cca ttt ctc ccc gcg agt				1121
Leu Thr Leu Gly Leu Gly Phe Leu Val Ile Pro Phe Leu Pro Ala Ser				
167	172	177	182	
aac ctg ttc ttc cga gtg ggc ttc gtg gtc gca gag cgt gtc ctc tac				1169
Asn Leu Phe Phe Arg Val Gly Phe Val Val Ala Glu Arg Val Leu Tyr				
183	188	193	198	
ctc ccc agc gtt ggg tac tgt gtg ctg ctg act ttt gga ttc gga gcc				1217
Leu Pro Ser Val Gly Tyr Cys Val Leu Leu Thr Phe Gly Phe Gly Ala				
199	204	209	214	
ctg agc aaa cat acc aag aaa aag aaa ctc att gcc gct gtc gtg ctg				1265
Leu Ser Lys His Thr Lys Lys Lys Lys Leu Ile Ala Ala Val Val Leu				
215	220	225	230	
gga atc tta ttc atc aac acg ctg aga tgt gtg ctg cgc agc ggc gag				1313
Gly Ile Leu Phe Ile Asn Thr Leu Arg Cys Val Leu Arg Ser Gly Glu				
231	236	241	246	
tgg cgg agt gag gaa cag ctt ttc aga agt gct ctg tct gtg tgt ccc				1361
Trp Arg Ser Glu Glu Gln Leu Phe Arg Ser Ala Leu Ser Val Cys Pro				
247	252	257	262	
ctc aat gct aag gtt cac tac aac att ggc aaa aac ctg gct gat aaa				1409
Leu Asn Ala Lys Val His Tyr Asn Ile Gly Lys Asn Leu Ala Asp Lys				
263	268	273	278	
ggc aac cag aca gct gcc atc aga tac tac cgg gaa gct gta aga tta				1457
Gly Asn Gln Thr Ala Ala Ile Arg Tyr Tyr Arg Glu Ala Val Arg Leu				
279	284	289	294	
aat ccc aag tat gtt cat gcc atg aat aat ctt gga aat atc tta aaa				1505
Asn Pro Lys Tyr Val His Ala Met Asn Asn Leu Gly Asn Ile Leu Lys				
295	300	305	310	
gaa agg aat gag cta cag gaa gct gag gag ctg ctg tct ttg gct gtt				1553
Glu Arg Asn Glu Leu Gln Glu Ala Glu Glu Leu Leu Ser Leu Ala Val				
311	316	321	326	
caa ata cag cca gac ttt gcc gct gcg tgg atg aat cta ggc ata gtg				1601
Gln Ile Gln Pro Asp Phe Ala Ala Ala Trp Met Asn Leu Gly Ile Val				
327	332	337	342	

cag aat agc ctg aaa cgg ttt gaa gca gca gag caa agt tac cgg aca	1649
Gln Asn Ser Leu Lys Arg Phe Glu Ala Ala Glu Gln Ser Tyr Arg Thr	
343 348 353 358	
gca att aaa cac aga agg aaa tac cca gac tgt tac tac aac ctc ggg	1697
Ala Ile Lys His Arg Arg Lys Tyr Pro Asp Cys Tyr Tyr Asn Leu Gly	
359 364 369 374	
cgt ctg tat gca gat ctc aat cgc cac gtg gat gcc ttg aat gcg tgg	1745
Arg Leu Tyr Ala Asp Leu Asn Arg His Val Asp Ala Leu Asn Ala Trp	
375 380 385 390	
aga aat gcc acc gtg ctg aaa cca gag cac agc ctg gcc tgg aac aac	1793
Arg Asn Ala Thr Val Leu Lys Pro Glu His Ser Leu Ala Trp Asn Asn	
391 396 401 406	
atg att ata ctc ctc gac aat aca ggt aat tta gcc caa gct gaa gca	1841
Met Ile Ile Leu Leu Asp Asn Thr Gly Asn Leu Ala Gln Ala Glu Ala	
407 412 417 422	
gtt gga aga gag gca ctg gaa tta ata cct aat gat cac tct ctc atg	1889
Val Gly Arg Glu Ala Leu Glu Leu Ile Pro Asn Asp His Ser Leu Met	
423 428 433 438	
ttc tcg ttg gca aac gtg ctg ggg aaa tcc cag aaa tac aag gaa tct	1937
Phe Ser Leu Ala Asn Val Leu Gly Lys Ser Gln Lys Tyr Lys Glu Ser	
439 444 449 454	
gaa gct tta ttc ctc aag gca att aaa gca aat cca aat gct gca agt	1985
Glu Ala Leu Phe Leu Lys Ala Ile Lys Ala Asn Pro Asn Ala Ala Ser	
455 460 465 470	
tac cat ggt aat ttg gct gtg ctt tat cat cgt tgg gga cat cta gac	2033
Tyr His Gly Asn Leu Ala Val Leu Tyr His Arg Trp Gly His Leu Asp	
471 476 481 486	
ttg gcc aag aaa cac tat gaa atc tcc ttg cag ctt gac ccc acg gca	2081
Leu Ala Lys Lys His Tyr Glu Ile Ser Leu Gln Leu Asp Pro Thr Ala	
487 492 497 502	
tca gga act aag gag aat tac ggt ctg ctg aga aga aag cta gaa cta	2129
Ser Gly Thr Lys Glu Asn Tyr Gly Leu Leu Arg Arg Lys Leu Glu Leu	
503 508 513 518	
atg caa aag aaa gct gtc tga tc ctgtttcctt catgttttga gtttgagtgt	2182
Met Gln Lys Lys Ala Val *	
519 524	
gtgtgtgcat gaggcataatc attaatagta tgtggttaca ttttaaccatt taaaagtctt	2242
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accagcaata tactcttgaa tgcgtgatat gatttttcat tgaaattgta ttttttcaga	2362
caactcaaat gtaattctaa aattccaaaa atgtcttttt taattaaaca gaaaaagaga	2422

aaaaattatc ttgagcaact tttagtagaa ttgagcttac atttgggatc tgagccttgt 2482
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<222> (338)..(1936)

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caaaaatata cattttccta cttaagcttg gtaccgagct cggatccact agtccagtgt 180
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ccctagagag gacaccggga caccagaag ccgggaa atg atg ttt cag gat tca 355
Met Met Phe Gln Asp Ser
1

gtg gcc ttt gag gat gtg gct gtc agc ttc acc cag gag gag tgg gct 403
Val Ala Phe Glu Asp Val Ala Val Ser Phe Thr Gln Glu Glu Trp Ala
7 12 17 22

ttg ctg gat cct tcc cag aag aat ctc tac agg gat gtg atg cag gaa 451
Leu Leu Asp Pro Ser Gln Lys Asn Leu Tyr Arg Asp Val Met Gln Glu
23 28 33 38

acc ttc aag aac ctg acc tct gta gga aaa aca tgg aaa gtt cag aac 499
Thr Phe Lys Asn Leu Thr Ser Val Gly Lys Thr Trp Lys Val Gln Asn
39 44 49 54

att gaa gat gag tac aaa aat ccc agg aga aat cta agt ctt atg aga 547
Ile Glu Asp Glu Tyr Lys Asn Pro Arg Arg Asn Leu Ser Leu Met Arg
55 60 65 70

gag aaa ctc tgt gaa agt aaa gaa agt cat cac tgt gga gaa agc ttc 595
Glu Lys Leu Cys Glu Ser Lys Glu Ser His His Cys Gly Glu Ser Phe
71 76 81 86

aac cag att gca gat gac atg ctg aac agg aaa act ctt cct gga ata 643
Asn Gln Ile Ala Asp Asp Met Leu Asn Arg Lys Thr Leu Pro Gly Ile
87 92 97 102

aca cca tgt gaa agc agt gtg tgt gga gaa gtt ggc acg ggt cat tca 691
Thr Pro Cys Glu Ser Ser Val Cys Gly Glu Val Gly Thr Gly His Ser

caa tgt ggt aaa gcc ttc aga tgt acc tcg gac ctt caa agg cat gaa	1411
Gln Cys Gly Lys Ala Phe Arg Cys Thr Ser Asp Leu Gln Arg His Glu	
343 348 353 358	
aag aca cac act gag gat aaa ccc tat gga tgt aag cag tgt ggg aaa	1459
Lys Thr His Thr Glu Asp Lys Pro Tyr Gly Cys Lys Gln Cys Gly Lys	
359 364 369 374	
ggc ttt aga tgt gct tca caa ctt caa att cat gaa agg acg cac agt	1507
Gly Phe Arg Cys Ala Ser Gln Leu Gln Ile His Glu Arg Thr His Ser	
375 380 385 390	
gga gag aaa ccc cat gaa tgt aag gaa tgt gga aaa gta ttc aag tat	1555
Gly Glu Lys Pro His Glu Cys Lys Glu Cys Gly Lys Val Phe Lys Tyr	
391 396 401 406	
ttt tct tcc ttg cgt ata cat gaa agg acg cac act gga gag aag ccc	1603
Phe Ser Ser Leu Arg Ile His Glu Arg Thr His Thr Gly Glu Lys Pro	
407 412 417 422	
cat gaa tgt aag caa tgt gga aaa gca ttc agg tat ttc tct tcc ttg	1651
His Glu Cys Lys Gln Cys Gly Lys Ala Phe Arg Tyr Phe Ser Ser Leu	
423 428 433 438	
cat ata cat gaa agg aca cac act gga gat aag cca tat gag tgt aag	1699
His Ile His Glu Arg Thr His Thr Gly Asp Lys Pro Tyr Glu Cys Lys	
439 444 449 454	
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Val Cys Gly Lys Ala Phe Thr Cys Ser Ser Ser Ile Arg Tyr His Glu	
455 460 465 470	
agg act cac act gga gag aaa ccc tat gaa tgt aag cac tgt ggt aag	1795
Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Lys His Cys Gly Lys	
471 476 481 486	
gcc ttt att tcc aat tac att cga tat cat gaa agg act cac act gga	1843
Ala Phe Ile Ser Asn Tyr Ile Arg Tyr His Glu Arg Thr His Thr Gly	
487 492 497 502	
gag aaa ccc tat caa tgc aag caa tgt ggc aaa gcc ttt att cgt gcc	1891
Glu Lys Pro Tyr Gln Cys Lys Gln Cys Gly Lys Ala Phe Ile Arg Ala	
503 508 513 518	
agt tca tgt cga gaa cat gaa aga act cat acc att aat aga tga gaa	1939
Ser Ser Cys Arg Glu His Glu Arg Thr His Thr Ile Asn Arg *	
519 524 529	
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ccagatatgt cccagtgct ccacattaaa gatacatgcc cactttgctg tttcttcaga 2359
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Met Ala Val Phe His Asp Glu Val Glu Ile Glu Asp Phe
1 5 10
caa tat gac gag gac tcg gag acg tat ttc tat ccc tgc cca tgt gga 157
Gln Tyr Asp Glu Asp Ser Glu Thr Tyr Phe Tyr Pro Cys Pro Cys Gly
14 19 24 29
gat aac ttc tcc atc acc aag gaa gat ttg gag aat ggg gaa gac gtg 205
Asp Asn Phe Ser Ile Thr Lys Glu Asp Leu Glu Asn Gly Glu Asp Val
30 35 40 45
gca acg tgt cct agc tgc tct ctc att ata aaa gtg att tat gac aaa 253
Ala Thr Cys Pro Ser Cys Ser Leu Ile Ile Lys Val Ile Tyr Asp Lys
46 51 56 61
gat cag ttt gtg tgt gga gaa aca gtc cca gcc cct tca gcc aac aaa 301
Asp Gln Phe Val Cys Gly Glu Thr Val Pro Ala Pro Ser Ala Asn Lys
62 67 72 77
gaa tta gtt aaa tgc tga agaagc cttcaggaat ccaaatacctg aacatttgga 355
Glu Leu Val Lys Cys *
78 83
atgagcccag atagaaatat cgaatgcaaa gctactggct tcacagagac aaccatttat 415
gatttgctgt tctgtaagag tgtggattct ttctatcaac tgctgatata atcttcagga 475
agcaagtcca taacatgaca /tatctggatt ttgtgcttag aaccttaaata tggaagcatt 535
cttaattatg catctaaatt taaaagaaga taatttcaaa acagtgcctt ctttccttg 595

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 Met Gln Glu Thr Phe Lys Asn
 1 5
 ctg acc tct gta ggt tgt tgt cgg gat acc aga ttt cct act ccg aga 162
 Leu Thr Ser Val Gly Cys Cys Arg Asp Thr Arg Phe Pro Thr Pro Arg
 8 13 18 23
 ggc ccc ggg tcc ctc tgc cac aac ttc tgt cgc tct gcc gcc tgc acc 210
 Gly Pro Gly Ser Leu Cys His Asn Phe Cys Arg Ser Ala Ala Cys Thr
 24 29 34 39
 gtg acc cgc act att cac ggg agc cct aga gag gac acc ggg aca ccc 258
 Val Thr Arg Thr Ile His Gly Ser Pro Arg Glu Asp Thr Gly Thr Pro
 40 45 50 55
 aga agc cgg gaa atg atg ttt cag gat tca gtg gcc ttt gag gat gtg 306
 Arg Ser Arg Glu Met Met Phe Gln Asp Ser Val Ala Phe Glu Asp Val
 56 61 66 71
 gct gtc agc ttc acc cag gag gag tgg gct ttg ctg gat cct tcc cag 354
 Ala Val Ser Phe Thr Gln Glu Glu Trp Ala Leu Leu Asp Pro Ser Gln
 72 77 82 87
 aag aat ctc tac agg gat gtg atg cag gaa acc ttc aag aac ctg acc 402
 Lys Asn Leu Tyr Arg Asp Val Met Gln Glu Thr Phe Lys Asn Leu Thr
 88 93 98 103
 tct gta gga aaa aca tgg aaa gtt cag aac att gaa gat gag tac aaa 450
 Ser Val Gly Lys Thr Trp Lys Val Gln Asn Ile Glu Asp Glu Tyr Lys
 104 109 114 119
 aat ccc agg aga aat cta agt ctt atg aga gag aaa ctc tgt gaa agt 498
 Asn Pro Arg Arg Asn Leu Ser Leu Met Arg Glu Lys Leu Cys Glu Ser
 120 125 130 135
 aaa gaa agt cat cac tgt gga gaa agc ttc aac cag att gca gat gac 546
 Lys Glu Ser His His Cys Gly Glu Ser Phe Asn Gln Ile Ala Asp Asp

136		141		146		151	
atg ctg aac agg aaa act ctt cct gga ata aca cca tgt gaa agc agt							594
Met Leu Asn Arg Lys Thr Leu Pro Gly Ile Thr Pro Cys Glu Ser Ser							
152		157		162		167	
gtg tgt gga gaa gtt ggc acg ggt cat tca tct ctt aat acg cat atc							642
Val Cys Gly Glu Val Gly Thr Gly His Ser Ser Leu Asn Thr His Ile							
168		173		178		183	
aga gct gac act gga cac aag tca tct gag tat cag gaa tat gga gag							690
Arg Ala Asp Thr Gly His Lys Ser Ser Glu Tyr Gln Glu Tyr Gly Glu							
184		189		194		199	
aat cca tat aga aat aag gaa tgt aag aaa gcc ttc agt tat ctt gac							738
Asn Pro Tyr Arg Asn Lys Glu Cys Lys Lys Ala Phe Ser Tyr Leu Asp							
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tcc ttt caa tca cat gat aaa gct tgc act aaa gag aaa ccc tat gat							786
Ser Phe Gln Ser His Asp Lys Ala Cys Thr Lys Glu Lys Pro Tyr Asp							
216		221		226		231	
ggt aaa gaa tgt aca gaa acc ttc att tcc cat tca tgc att caa aga							834
Gly Lys Glu Cys Thr Glu Thr Phe Ile Ser His Ser Cys Ile Gln Arg							
232		237		242		247	
cac agg gta atg cac agt gga gat gga cct tat aaa tgt aag ttt tgt							882
His Arg Val Met His Ser Gly Asp Gly Pro Tyr Lys Cys Lys Phe Cys							
248		253		258		263	
ggg aaa gcc ttc tat ttt ctc aat tta tgt ctt atc cat gaa cga att							930
Gly Lys Ala Phe Tyr Phe Leu Asn Leu Cys Leu Ile His Glu Arg Ile							
264		269		274		279	
cac act ggt gtg aaa cca tat aag tgt aaa caa tgt ggt aag gcc ttt							978
His Thr Gly Val Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe							
280		285		290		295	
act cgt tcc act acc ctt cca gta cat gaa aga act cac aca gga gtg							1026
Thr Arg Ser Thr Thr Leu Pro Val His Glu Arg Thr His Thr Gly Val							
296		301		306		311	
aat gcc gat gaa tgt aaa gaa tgt ggg aat gca ttc agt ttt cct agt							1074
Asn Ala Asp Glu Cys Lys Glu Cys Gly Asn Ala Phe Ser Phe Pro Ser							
312		317		322		327	
gaa att cgt aga cat aaa agg tct cac act gga gaa aaa ccc tat gag							1122
Glu Ile Arg Arg His Lys Arg Ser His Thr Gly Glu Lys Pro Tyr Glu							
328		333		338		343	
tgt aag caa tgt ggg aaa gtc ttc att tct ttc agt tcc att cag tat							1170
Cys Lys Gln Cys Gly Lys Val Phe Ile Ser Phe Ser Ser Ile Gln Tyr							
344		349		354		359	
cat aag atg act cac act gga gag aaa ccc tat gaa tgt aag cag tgt							1218
His Lys Met Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Lys Gln Cys							
360		365		370		375	

ggg aaa gcc ttt aga tgt ggc tca cac ctt caa aag cat gga agg act Gly Lys Ala Phe Arg Cys Gly Ser His Leu Gln Lys His Gly Arg Thr 376 381 386 391	1266
cac act gga gag aaa ccc tat gaa tgt agg caa tgt ggt aaa gcc ttc His Thr Gly Glu Lys Pro Tyr Glu Cys Arg Gln Cys Gly Lys Ala Phe 392 397 402 407	1314
aga tgt acc tcg gac ctt caa agg cat gaa aag aca cac act gag gat Arg Cys Thr Ser Asp Leu Gln Arg His Glu Lys Thr His Thr Glu Asp 408 413 418 423	1362
aaa ccc tat gga tgt aag cag tgt ggg aaa ggc ttt aga tgt gct tca Lys Pro Tyr Gly Cys Lys Gln Cys Gly Lys Gly Phe Arg Cys Ala Ser 424 429 434 439	1410
caa ctt caa att cat gaa agg acg cac agt gga gag aaa ccc cat gaa Gln Leu Gln Ile His Glu Arg Thr His Ser Gly Glu Lys Pro His Glu 440 445 450 455	1458
tgt aag gaa tgt gga aaa gta ttc aag tat ttt tct tcc ttg cgt ata Cys Lys Glu Cys Gly Lys Val Phe Lys Tyr Phe Ser Ser Leu Arg Ile 456 461 466 471	1506
cat gaa agg acg cac act gga gag aag ccc cat gaa tgt aag caa tgt His Glu Arg Thr His Thr Gly Glu Lys Pro His Glu Cys Lys Gln Cys 472 477 482 487	1554
gga aaa gca ttc agg tat ttc tct tcc ttg cat ata cat gaa agg aca Gly Lys Ala Phe Arg Tyr Phe Ser Ser Leu His Ile His Glu Arg Thr 488 493 498 503	1602
cac act gga gat aag cca tat gag tgt aag gta tgt ggc aaa gcc ttc His Thr Gly Asp Lys Pro Tyr Glu Cys Lys Val Cys Gly Lys Ala Phe 504 509 514 519	1650
act tgt tcc agt tcc att cga tat cat gaa agg act cac act gga gag Thr Cys Ser Ser Ser Ile Arg Tyr His Glu Arg Thr His Thr Gly Glu 520 525 530 535	1698
aaa ccc tat gaa tgt aag cac tgt ggt aag gcc ttt att tcc aat tac Lys Pro Tyr Glu Cys Lys His Cys Gly Lys Ala Phe Ile Ser Asn Tyr 536 541 546 551	1746
att cga tat cat gaa agg act cac act gga gag aaa ccc tat caa tgc Ile Arg Tyr His Glu Arg Thr His Thr Gly Glu Lys Pro Tyr Gln Cys 552 557 562 567	1794
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gaa aga act cat acc att aat aga tga gaaat ccttttagtg gaagcaacgg Glu Arg Thr His Thr Ile Asn Arg *	1894
584 589	

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 ccttcttcgc cttctcctcg gctgtggagc cctggtgggg ggtctgcgcc cggtcacc 178
 atg acg acg ccg gcg aat gcc cag aat gcc agc aaa acg tgg gaa ctg 226
 Met Thr Thr Pro Ala Asn Ala Gln Asn Ala Ser Lys Thr Trp Glu Leu
 1 5 10 15
 agt ctg tat gag ctg cac cgg acc ccg cag gaa gcc ata atg gat ggc 274
 Ser Leu Tyr Glu Leu His Arg Thr Pro Gln Glu Ala Ile Met Asp Gly
 17 22 27 32
 aca gag att gct gtt tcc cct cgg tca ctg cat tca gaa ctc atg tgc 322
 Thr Glu Ile Ala Val Ser Pro Arg Ser Leu His Ser Glu Leu Met Cys
 33 38 43 48
 cct atc tgc ctg gac atg ctg aag aat acg atg acc acc aag gag tgc 370
 Pro Ile Cys Leu Asp Met Leu Lys Asn Thr Met Thr Thr Lys Glu Cys
 49 54 59 64
 ctc cac aga ttc tgc tct gac tgc att gtc aca gcc cta cgg agc ggg 418
 Leu His Arg Phe Cys Ser Asp Cys Ile Val Thr Ala Leu Arg Ser Gly
 65 70 75 80
 aac aag gag tgt cct acc tgc cga aag aag ctg gtg tcc aag cga tcc 466
 Asn Lys Glu Cys Pro Thr Cys Arg Lys Lys Leu Val Ser Lys Arg Ser
 81 86 91 96

cta cgg cca gac ccc aac ttt gat gcc ctg atc tct aag atc tat cct	514
Leu Arg Pro Asp Pro Asn Phe Asp Ala Leu Ile Ser Lys Ile Tyr Pro	
97 102 107 112	
agc cgg gag gaa tac gag gcc cat caa gac cga gtg ctt atc cgc ctg	562
Ser Arg Glu Glu Tyr Glu Ala His Gln Asp Arg Val Leu Ile Arg Leu	
113 118 123 128	
agc cgc ctg cac aac cag cag gca ttg agc tcc agc att gag gag ggg	610
Ser Arg Leu His Asn Gln Gln Ala Leu Ser Ser Ser Ile Glu Glu Gly	
129 134 139 144	
cta cgc atg cag gcc atg cac agg gcc cag cgt gtg agg cgg ccg ata	658
Leu Arg Met Gln Ala Met His Arg Ala Gln Arg Val Arg Arg Pro Ile	
145 150 155 160	
cca ggg tca gat cag acc aca acg atg agt ggg ggg gaa gga gag ccc	706
Pro Gly Ser Asp Gln Thr Thr Thr Met Ser Gly Gly Glu Gly Glu Pro	
161 166 171 176	
ggg gag gga gaa ggg gat gga gaa gat gtg agc tca gac tcc gcc cct	754
Gly Glu Gly Glu Gly Asp Gly Glu Asp Val Ser Ser Asp Ser Ala Pro	
177 182 187 192	
gac tct gcc cca ggc cct gct ccc aag cga ccc cgt gga ggg ggc gca	802
Asp Ser Ala Pro Gly Pro Ala Pro Lys Arg Pro Arg Gly Gly Gly Ala	
193 198 203 208	
ggg ggg agc agt gta ggg acg ggg gga ggc ggc act ggt ggg gtg ggt	850
Gly Gly Ser Ser Val Gly Thr Gly Gly Gly Gly Thr Gly Gly Val Gly	
209 214 219 224	
ggg ggt gcc ggt tcg gaa gac tct ggt gac cgg gga ggg act ctg gga	898
Gly Gly Ala Gly Ser Glu Asp Ser Gly Asp Arg Gly Gly Thr Leu Gly	
225 230 235 240	
ggg gga acg ctg ggc ccc cca agc cct cct ggg gcc ccc agc ccc cca	946
Gly Gly Thr Leu Gly Pro Pro Ser Pro Pro Gly Ala Pro Ser Pro Pro	
241 246 251 256	
gag cca ggt gga gaa att gag ctc gtg ttc cgg ccc cac ccc ctg ctc	994
Glu Pro Gly Gly Glu Ile Glu Leu Val Phe Arg Pro His Pro Leu Leu	
257 262 267 272	
gtg gag aag gga gaa tac tgc cag acg agg tat gtg aag aca act ggg	1042
Val Glu Lys Gly Glu Tyr Cys Gln Thr Arg Tyr Val Lys Thr Thr Gly	
273 278 283 288	
aat gcc aca gtg gac cac ctc tcc aag tac ttg gcc ctg cgc att gcc	1090
Asn Ala Thr Val Asp His Leu Ser Lys Tyr Leu Ala Leu Arg Ile Ala	
289 294 299 304	
ctc gag cgg agg caa cag cag gaa gca ggg gag cca gga ggg cct gga	1138
Leu Glu Arg Arg Gln Gln Gln Glu Ala Gly Glu Pro Gly Gly Pro Gly	
305 310 315 320	

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Gly Gly Ala Ser Asp Thr Gly Gly Pro Asp Gly Cys Gly Gly Glu Gly	
321 326 331 336	
ggg ggt gcc gga gga ggt gac ggt cct gag gag cct gct ttg ccc agc	1234
Gly Gly Ala Gly Gly Gly Asp Gly Pro Glu Glu Pro Ala Leu Pro Ser	
337 342 347 352	
ctg gag ggc gtc agt gaa aag cag tac acc atc tac atc gca cct gga	1282
Leu Glu Gly Val Ser Glu Lys Gln Tyr Thr Ile Tyr Ile Ala Pro Gly	
353 358 363 368	
ggc ggg gcg ttc acg acg ttg aat ggc tcg ctg acc ctg gag ctg gtg	1330
Gly Gly Ala Phe Thr Thr Leu Asn Gly Ser Leu Thr Leu Glu Leu Val	
369 374 379 384	
aat gag aaa ttc tgg aag gtg tcc cgg cca ctg gag ctg tgc tat gct	1378
Asn Glu Lys Phe Trp Lys Val Ser Arg Pro Leu Glu Leu Cys Tyr Ala	
385 390 395 400	
ccc acc aag gat cca aag tga cc ccaccagggg acagccagag gaaggggacc	1431
Pro Thr Lys Asp Pro Lys *	
401 406	
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cccagccagc caataagagg acacaaatga ggacacgtgg cttttataca aagtatctat	1551
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Met Ser	
1	
acc gcc atg aat ttc ggg acc aag agc ttc cag ccg cgg ccc ccg gac	165
Thr Ala Met Asn Phe Gly Thr Lys Ser Phe Gln Pro Arg Pro Pro Asp	
3 8 13 18	

aag ggc agc ttc ccg ctg gat cac tta ggt gaa tgt aaa agc ttt aaa 213
 Lys Gly Ser Phe Pro Leu Asp His Leu Gly Glu Cys Lys Ser Phe Lys
 19 24 29 34

gag aaa ttc atg aag tgt ctt cat aac aat aat ttt gaa aat gct ttg 261
 Glu Lys Phe Met Lys Cys Leu His Asn Asn Asn Phe Glu Asn Ala Leu
 35 40 45 50

tgc aga aag gaa tca aaa gaa tat tta gaa tgc agg atg gag aga aaa 309
 Cys Arg Lys Glu Ser Lys Glu Tyr Leu Glu Cys Arg Met Glu Arg Lys
 51 56 61 66

ttg atg cta caa gaa cca ttg gag aaa ctg gga ttt gga gac ttg act 357
 Leu Met Leu Gln Glu Pro Leu Glu Lys Leu Gly Phe Gly Asp Leu Thr
 67 72 77 82

agt gga aaa tca gag gca aaa aaa tga atttt gatgagaaga cccctgggccc 409
 Ser Gly Lys Ser Glu Ala Lys Lys *
 83 88

gtgttcagtg gtctctcagg acggaggggca tcctcctgcc tcttaggttg gctgaggcct 469

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ctgggtaggg agtggcgctc cgttttcct taggaggggtg tttctgcatt gaaccctga 589

gtgggacggc gttcccggca aagctgggag ggaggcgagc gtggggcaag acccttgtct 649

tcgaggccgg ggccctcttg tatggggcgg ttttatgttg cagtcctctg atactttctg 709

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ttaaaaaaaaaaaa 783

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ttgttccagg tacaagaagc tggaagacct tctggagaag agcttttctc tgggtgaag 178
 atg ccg tcc ctg cag ccc gtg gtg atg tgc gtc atg aag cac ctg ccc 226
 Met Pro Ser Leu Gln Pro Val Val Met Cys Val Met Lys His Leu Pro
 1 5 10 15

aag gtt ccg gag aaa aaa ctg aag ctg gtt atg gct gac aag gag ctg 274

Lys	Val	Pro	Glu	Lys	Lys	Leu	Lys	Leu	Val	Met	Ala	Asp	Lys	Glu	Leu		
17					22					27					32		
tat	cga	gcc	tgc	gcc	gtg	gag	gtg	aag	cgg	cag	atc	tgg	caa	gac	aac		322
Tyr	Arg	Ala	Cys	Ala	Val	Glu	Val	Lys	Arg	Gln	Ile	Trp	Gln	Asp	Asn		
33					38					43					48		
cag	gcc	ctc	ttc	ggg	gac	gag	gtt	tcc	cca	ctc	ctg	aag	cag	tac	atc		370
Gln	Ala	Leu	Phe	Gly	Asp	Glu	Val	Ser	Pro	Leu	Leu	Lys	Gln	Tyr	Ile		
49					54					59					64		
ctg	gag	aag	gag	agc	gct	ctc	ttc	agt	aca	gag	ctc	tct	gtc	ctg	cac		418
Leu	Glu	Lys	Glu	Ser	Ala	Leu	Phe	Ser	Thr	Glu	Leu	Ser	Val	Leu	His		
65					70					75					80		
aac	ttt	ttc	agt	cct	tcc	ccc	aag	acc	agg	cgc	cag	ggc	gag	gtg	gtg		466
Asn	Phe	Phe	Ser	Pro	Ser	Pro	Lys	Thr	Arg	Arg	Gln	Gly	Glu	Val	Val		
81					86					91					96		
cag	cgg	ctg	acg	cgg	atg	gtg	ggg	aag	aac	gtg	aag	ctg	tac	gac	atg		514
Gln	Arg	Leu	Thr	Arg	Met	Val	Gly	Lys	Asn	Val	Lys	Leu	Tyr	Asp	Met		
97					102					107					112		
gtg	ctg	cag	ttt	ctg	cgc	acg	ctc	ttc	ctg	cgc	acg	cgg	aat	gtg	cac		562
Val	Leu	Gln	Phe	Leu	Arg	Thr	Leu	Phe	Leu	Arg	Thr	Arg	Asn	Val	His		
113					118					123					128		
tac	tgc	acg	ctg	cgg	gct	gag	ctg	ctc	atg	tcc	ctg	cac	gac	ctg	gac		610
Tyr	Cys	Thr	Leu	Arg	Ala	Glu	Leu	Leu	Met	Ser	Leu	His	Asp	Leu	Asp		
129					134					139					144		
gtg	ggt	gaa	atc	tgc	acc	gtg	gac	ccg	tgc	cac	aag	ttc	acc	tgg	tgc		658
Val	Gly	Glu	Ile	Cys	Thr	Val	Asp	Pro	Cys	His	Lys	Phe	Thr	Trp	Cys		
145					150					155					160		
ctg	gac	gcc	tgc	atc	cga	gag	cgg	ttc	gtg	gac	agc	aag	agg	gcg	cgg		706
Leu	Asp	Ala	Cys	Ile	Arg	Glu	Arg	Phe	Val	Asp	Ser	Lys	Arg	Ala	Arg		
161					166					171					176		
gag	ctg	cag	ggg	ttt	ctc	gat	ggc	gtc	aag	aag	ggc	cag	gag	cag	gtg		754
Glu	Leu	Gln	Gly	Phe	Leu	Asp	Gly	Val	Lys	Lys	Gly	Gln	Glu	Gln	Val		
177					182					187					192		
ctg	ggg	gac	ctg	tcc	atg	atc	ctg	tgt	gac	ccc	ttc	gcc	atc	aac	acg		802
Leu	Gly	Asp	Leu	Ser	Met	Ile	Leu	Cys	Asp	Pro	Phe	Ala	Ile	Asn	Thr		
193					198					203					208		
ctg	gca	ctg	agc	aca	gtc	agg	cac	ctg	cag	gag	ctg	gtc	ggc	cag	gag		850
Leu	Ala	Leu	Ser	Thr	Val	Arg	His	Leu	Gln	Glu	Leu	Val	Gly	Gln	Glu		
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aca	ctg	ccc	agg	gac	agc	ccc	gac	ctc	ctg	ctg	ctg	ctc	cgg	ctg	ctg		898
Thr	Leu	Pro	Arg	Asp	Ser	Pro	Asp	Leu	Leu	Leu	Leu	Leu	Arg	Leu	Leu		
225					230					235					240		
gcg	ctg	ggc	cag	gga	gcc	tgg	gac	atg	atc	gac	agc	cag	gtc	ttc	aag		946
Ala	Leu	Gly	Gln	Gly	Ala	Trp	Asp	Met	Ile	Asp	Ser	Gln	Val	Phe	Lys		

241	246	251	256	
gag ccc aag atg gag gta gag ctc atc acc agg ttc ctc ccg atg ctc				994
Glu Pro Lys Met Glu Val Glu Leu Ile Thr Arg Phe Leu Pro Met Leu				
257	262	267	272	
atg tcc ttc ctg gtg gat gac tac act ttc aat gtg gat cag aaa ctt				1042
Met Ser Phe Leu Val Asp Asp Tyr Thr Phe Asn Val Asp Gln Lys Leu				
273	278	283	288	
ccg gct gag gag aaa gcc cca gtc tca tat cca aac aca ctt ccc gaa				1090
Pro Ala Glu Glu Lys Ala Pro Val Ser Tyr Pro Asn Thr Leu Pro Glu				
289	294	299	304	
agc ttc act aag ttt ctg cag gag cag cgc atg gcc tgc gag gtg ggg				1138
Ser Phe Thr Lys Phe Leu Gln Glu Gln Arg Met Ala Cys Glu Val Gly				
305	310	315	320	
ctg tac tac gtc ctg cac atc acc aag cag agg aac aag aac gcg ctc				1186
Leu Tyr Tyr Val Leu His Ile Thr Lys Gln Arg Asn Lys Asn Ala Leu				
321	326	331	336	
ctc cgc ctg ctg ccc ggg ctg gtg gag acc ttt ggc gac ttg gcc ttt				1234
Leu Arg Leu Leu Pro Gly Leu Val Glu Thr Phe Gly Asp Leu Ala Phe				
337	342	347	352	
ggc gac atc ttc ctc cac ctg ctc acg ggc aac ctt gcg ctg ctg gcc				1282
Gly Asp Ile Phe Leu His Leu Leu Thr Gly Asn Leu Ala Leu Leu Ala				
353	358	363	368	
gac gaa ttt gcc ctt gag gac ttc tgc agc agc ctc ttc gat ggc ttc				1330
Asp Glu Phe Ala Leu Glu Asp Phe Cys Ser Ser Leu Phe Asp Gly Phe				
369	374	379	384	
ttc ctc acc gcc tct cca agg aag gag aac gtg cac cgg cac gcg ctg				1378
Phe Leu Thr Ala Ser Pro Arg Lys Glu Asn Val His Arg His Ala Leu				
385	390	395	400	
cgg ctc ctc att cac ctg cac ccc agg gtg gcc ccg tct aag ctg gag				1426
Arg Leu Leu Ile His Leu His Pro Arg Val Ala Pro Ser Lys Leu Glu				
401	406	411	416	
gcg ttg cag aag gcc ctg gag cct aca ggc cag agc gga gag gca gtg				1474
Ala Leu Gln Lys Ala Leu Glu Pro Thr Gly Gln Ser Gly Glu Ala Val				
417	422	427	432	
aag gag ctt tac tcc cag ctc ggc gag aag ctg gaa cag ctg gat cac				1522
Lys Glu Leu Tyr Ser Gln Leu Gly Glu Lys Leu Glu Gln Leu Asp His				
433	438	443	448	
cgg aag ccc agc ccg gca cag gct gcg gag acg ccg gcc ctg gag ctg				1570
Arg Lys Pro Ser Pro Ala Gln Ala Ala Glu Thr Pro Ala Leu Glu Leu				
449	454	459	464	
ccc ctc ccc agc gtg ccc gcc cct gcc ccg ctc tga gggc cctccagacc				1620
Pro Leu Pro Ser Val Pro Ala Pro Ala Pro Leu *				
465	470	475		

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cctggatgta	cagggcagtc	tctcttcccg	gggctatggc	tgggcctgtc	ctgccgtcat	1740
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aactttaccg	actgccacce	atgtggaaat	gaggcagcct	gtaaccagat	gtcagccgcc	2460
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					Met Val Ser	
					1	
tgg atc atc tcc agg ctg gtg gtg ctt ata ttt ggc acc ctt tac cct						165
Trp Ile Ile Ser Arg Leu Val Val Leu Ile Phe Gly Thr Leu Tyr Pro						
4	9		14		19	
gcg tat tat tcc tac aag gct gtg aaa tca aag gac att aag gaa tat						213

Ala Tyr Tyr Ser Tyr Lys Ala Val Lys Ser Lys Asp Ile Lys Glu Tyr	
20 25 30 35	
gtc aaa tgg atg atg tac tgg att ata ttt gca ctt ttc acc aca gca	261
Val Lys Trp Met Met Tyr Trp Ile Ile Phe Ala Leu Phe Thr Thr Ala	
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Glu Thr Phe Thr Asp Ile Phe Leu Cys Trp Phe Pro Phe Tyr Tyr Glu	
52 57 62 67	
cta aaa ata gca ttt gta gcc tgg ctg ctg tct ccc tac aca aaa ggc	357
Leu Lys Ile Ala Phe Val Ala Trp Leu Leu Ser Pro Tyr Thr Lys Gly	
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Ser Ser Leu Leu Tyr Arg Lys Phe Val His Pro Thr Leu Ser Ser Lys	
84 89 94 99	
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Glu Lys Glu Ile Asp Asp Cys Leu Val Gln Ala Lys Asp Arg Ser Tyr	
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Asp Ala Leu Val His Phe Gly Lys Arg Gly Leu Asn Val Ala Ala Thr	
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132 137 142 147	
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Leu Arg Ser Phe Ser Met Gln Asp Leu Thr Thr Ile Arg Gly Asp Gly	
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Ala Pro Ala Pro Ser Gly Pro Pro Pro Pro Gly Ser Gly Arg Ala Ser	
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Gly Lys His Gly Gln Pro Lys Met Ser Arg Ser Ala Ser Glu Ser Ala	
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Ser Ser Ser Gly Thr Ala *	
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tgcttggaac tctaaatgcc accctggagc gggagccgca  atg gca cgg ctg cac      175
                                         Met Ala Arg Leu His
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gcc cgg acc ttg tgg tac gac agg ccc agg tat gtg ttc atg gag ttt      223
Ala Arg Thr Leu Trp Tyr Asp Arg Pro Arg Tyr Val Phe Met Glu Phe
   6                               11                               16                               21

tgt gtt gag gac agc acc gat gtc cac gtg ctt att gag gat cac cgc      271
Cys Val Glu Asp Ser Thr Asp Val His Val Leu Ile Glu Asp His Arg
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att gtg ttc agc tgc aag aat gcc gat gga gtg gag ttg tac aat gag      319
Ile Val Phe Ser Cys Lys Asn Ala Asp Gly Val Glu Leu Tyr Asn Glu
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att gag ttc tat gcc aaa ttg aac tcc aag gac tcc cag gat aag cgc      367
Ile Glu Phe Tyr Ala Lys Leu Asn Ser Lys Asp Ser Gln Asp Lys Arg
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tct tcc cgc tct att act tgt ttt gtg aga aaa tgg aag gaa aag gtg      415
Ser Ser Arg Ser Ile Thr Cys Phe Val Arg Lys Trp Lys Glu Lys Val
  70                               75                               80                               85

gcc tgg ccg cgg ctt acc aag gag gat atc aag cca gtg tgg ctg tct      463
Ala Trp Pro Arg Leu Thr Lys Glu Asp Ile Lys Pro Val Trp Leu Ser
  86                               91                               96                               101

gtg gac ttt gat aac tgg aga gac tgg gaa ggg gat gaa gag atg gag      511
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 102                               107                               112                               117

ctg gct cat gtg gaa cat tat gca gag ctt ttg aag aag gtc agc acc      559
Leu Ala His Val Glu His Tyr Ala Glu Leu Leu Lys Lys Val Ser Thr
 118                               123                               128                               133

aag aga cct cca cct gcc atg gat gat ttg gat ttc acc acc acc gtg      607
Lys Arg Pro Pro Pro Ala Met Asp Asp Leu Asp Phe Thr Thr Thr Val
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gtc tct tgc tgt ccc gcg gag ctg cag act gaa ggg agc aac ggc aag      655
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Asn	Leu	Leu	Arg	Asp	Leu	Ala	Val	His	Ile	Ala	His	Ser	Leu	Arg	Asn		
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Ser	Pro	Asp	Trp	Gly	Gly	Val	Val	Ile	Leu	His	Arg	Lys	Glu	Gly	Asp		
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Ser	Glu	Phe	Met	Asn	Ile	Ile	Ala	Asn	Glu	Ile	Gly	Ser	Glu	Glu	Thr		
454					459					464					469		
ctc	ctg	ttc	tta	act	gtg	ggc	gat	gag	aaa	ggg	ggg	gga	ctc	ttc	tta		1615
Leu	Leu	Phe	Leu	Thr	Val	Gly	Asp	Glu	Lys	Gly	Gly	Gly	Leu	Phe	Leu		
470					475					480					485		
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Leu	Ala	Gly	Pro	Pro	Ala	Ser	Val	Glu	Thr	Leu	Gly	Pro	Arg	Val	Ala		
486					491					496					501		
gag	gtc	ctg	gaa	ggc	aaa	gga	gca	ggg	aag	aaa	ggc	cgt	ttt	cag	ggc		1711
Glu	Val	Leu	Glu	Gly	Lys	Gly	Ala	Gly	Lys	Lys	Gly	Arg	Phe	Gln	Gly		
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Lys	Ala	Thr	Lys	Met	Ser	Arg	Arg	Met	Glu	Ala	Gln	Ala	Leu	Leu	Gln		
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Asp	Tyr	Ile	Ser	Thr	Gln	Ser	Ala	Lys	Glu	*							
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Val Leu Ala Val Val Ala Gly Val Ala Ala Glu Ala Val Ala Ser Trp	
239 244 249 254	
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Ile Gly Leu Gly Pro Val Ala Pro Phe Val Ala Ala Ile Pro Leu Leu	
255 260 265 270	
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Ala Leu Ala Gly Ala Leu Ala Leu Arg Asn Trp Gly Glu Asn Tyr Asp	
271 276 281 286	
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Arg Gln Arg Ala Phe Ser Arg Thr Cys Ala Gly Gly Leu Arg Cys Leu	
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Leu Ser Asp Arg Arg Val Leu Leu Leu Gly Thr Ile Gln Ala Leu Phe	
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Glu Ser Val Ile Phe Ile Phe Val Phe Leu Trp Thr Pro Val Leu Asp	
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Pro His Gly Ala Pro Leu Gly Ile Ile Phe Ser Ser Phe Met Ala Ala	
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agc ctg ctt ggc tct tcc ctg tac cgt atc gcc acc tcc aag agg tac	1104
Ser Leu Leu Gly Ser Ser Leu Tyr Arg Ile Ala Thr Ser Lys Arg Tyr	
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cac ctt cag ccc atg cac ctg ctg tcc ctt gct gtg ctg atc gtc gtc	1152
His Leu Gln Pro Met His Leu Leu Ser Leu Ala Val Leu Ile Val Val	
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Pro Val Glu Ser Phe Ile Ala Phe Leu Leu Ile Glu Leu Ala Cys Gly	
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415 420 425 430	
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Thr Glu Gln Ala Gly Val Leu Asn Trp Phe Arg Val Pro Leu His Ser	
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Met Pro Ser	
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Glu Lys Thr Phe Lys Gln Arg Arg Thr Phe Glu Gln Arg Val Glu Asp	
4 9 14 19	
gtc cga ctt att cga gag cag cat cca acc aaa atc ccg gtg ata ata	213
Val Arg Leu Ile Arg Glu Gln His Pro Thr Lys Ile Pro Val Ile Ile	
20 25 30 35	
gaa cga tac aag ggt gag aag cag ctt cct gtt ctg gat aaa aca aag	261
Glu Arg Tyr Lys Gly Glu Lys Gln Leu Pro Val Leu Asp Lys Thr Lys	
36 41 46 51	
ttc ctt gta cct gac cat gtc aac atg agt gag ctc atc aag ata att	309
Phe Leu Val Pro Asp His Val Asn Met Ser Glu Leu Ile Lys Ile Ile	
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Asn Gly His Ser Met Val Ser Val Ser Thr Pro Ile Ser Glu Val Tyr	
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Gln Glu Thr Phe Gly Met Lys Leu Ser Val *	
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Lys Tyr Val Leu Ile Arg Val His Ser Ala Pro Arg Ser Gly Ala Pro
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gct gca gag agc aag gag atc gtg cgc ggc tac aag tgg gct gag tac      859
Ala Ala Glu Ser Lys Glu Ile Val Arg Gly Tyr Lys Trp Ala Glu Tyr
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Asp	Lys	Lys	Ile	His	Val	Tyr	Gly	Tyr	Ser	Met	Ala	Tyr	Gly	Pro	Ala	
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Gln	His	Ala	Ile	Ser	Thr	Glu	Lys	Ile	Lys	Ala	Lys	Tyr	Pro	Asp	Tyr	
101					106					111					116	
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Glu	Val	Thr	Trp	Ala	Asn	Asp	Gly	Tyr	*							
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1																

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6					11					16					21	

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22					27					32					37	

tcc	aag	tca	ttc	caa	gga	agt	caa	gga	cga	gca	tac	ctc	ttt	aac	tca	
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Met Ala Arg Phe
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Ala Leu Thr Val Val Arg His Gly Glu Thr Arg Phe Asn Lys Glu Lys
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Ile Ile Gln Gly Gln Gly Val Asp Glu Pro Leu Ser Glu Thr Gly Phe
21 26 31 36

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Lys Gln Ala Ala Ala Ala Gly Ile Phe Leu Asn Asn Val Lys Phe Thr
37 42 47 52

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His Ala Phe Ser Ser Asp Leu Met Arg Thr Lys Gln Thr Met His Gly

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Lys Gly Val Leu Leu Glu Pro Phe Val His Gln Val Gly Gly His Ser	
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Cys Val Leu Arg Phe Asn Glu Thr Thr Leu Cys Lys Pro Leu Val Pro	
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Arg Glu His Gln Phe Tyr Glu Thr Leu Pro Ala Glu Met Arg Lys Phe	
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Thr Pro Gln Tyr Lys Gly Val Val Ser Val Arg Phe Glu Glu Asp Glu	
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Ile Val Asp Ile Val Asp Asn Ser Asp Cys Glu Pro Lys Ser Lys Leu	
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cta agg tgg aca aca aac aaa aaa cat cat gtc tta gaa aca gaa aag	564
Leu Arg Trp Thr Thr Asn Lys Lys His His Val Leu Glu Thr Glu Lys	
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Thr Pro Lys Asp Trp Val Arg Gln His Arg Lys Glu Glu Lys Met Lys	
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Ser His Lys Leu Glu Glu Glu Phe Glu Trp Leu Lys Lys Ser Glu Val	
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Leu Tyr Tyr Thr Val Glu Lys Lys Gly Asn Ile Ser Ser Gln Leu Lys	
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His Tyr Asn Pro Trp Ser Met Lys Cys His Gln Gln Gln Leu Gln Arg	
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Met Lys Glu Asn Ala Lys His Arg Asn Gln Tyr Lys Phe Ile Leu Leu	
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Pro Ser Ala Lys Gln Arg Gly Ser Lys Gly Gly His Gly Ala Ala Ser
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ccg acg cca gca gcg ccc gcg tgc cgc tcg ccc agt ccc ggg gga gcc 262
Pro Thr Pro Ala Ala Pro Ala Cys Arg Ser Pro Ser Pro Gly Gly Ala
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Pro Ala Ser Phe Pro Gly Arg Ala Pro Arg Ser Leu Ala Ser Gln Pro
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Gly Ser Lys Gly Gly His Gly Ala Ala Ser Pro Ser Glu Lys Gly Ala
82 87 92 97
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His Pro Ser Gly Gly Ala Asp Asp Val Ala Lys Lys Pro Pro Pro Ala
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ccg cag cag ccg ccg ccg ccg ccc gcg ccg cac ccg cag cag cac ccg 502
Pro Gln Gln Pro Pro Pro Pro Pro Ala Pro His Pro Gln Gln His Pro
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Ile Gln Thr Ser Ala Lys Ser Arg Glu Trp Asp Met Glu Ala Leu Arg	
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Ser Thr Leu Gln Thr Met Glu Ser Asp Ile Tyr Thr Glu Val Arg Glu	
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Leu Val Ser Leu Lys Gln Glu Gln Gln Ala Phe Lys Glu Ala Ala Asp	
402 407 412 417	
acg gag cgg ctc gcc ctg cag gcc ctc acg gag aag ctt ctc agg tct	1414
Thr Glu Arg Leu Ala Leu Gln Ala Leu Thr Glu Lys Leu Leu Arg Ser	
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Glu Glu Ser Val Ser Arg Leu Pro Glu Glu Ile Arg Arg Leu Glu Glu	
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Glu Leu Arg Gln Leu Lys Ser Asp Ser His Gly Pro Lys Glu Asp Gly	
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Gly Phe Arg His Ser Glu Ala Phe Glu Ala Leu Gln Gln Lys Ser Gln	
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Gly Leu Asp Ser Arg Leu Gln His Val Glu Asp Gly Val Leu Ser Met	
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Gln Val Ala Ser Ala Arg Gln Thr Glu Ser Leu Glu Ser Leu Leu Ser	
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Lys Ser Gln Glu His Glu Gln Arg Leu Ala Ala Leu Gln Gly Arg Leu	
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Glu Gly Leu Gly Ser Ser Glu Ala Asp Gln Asp Gly Leu Ala Ser Thr	
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Val Arg Ser Leu Gly Glu Thr Gln Leu Val Leu Tyr Gly Asp Val Glu	
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594	599	604	609	
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Leu Asp Asn Leu Lys Ala Ser Val Ser Gln Val Glu Ala Asp Leu Lys				
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Met Leu Arg Thr Ala Val Asp Ser Leu Val Ala Tyr Ser Val Lys Ile				
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642	647	652	657	
ctg agg aat gat ctg gat agg ttg ttt gtg aaa gtg gag aag att cac				2134
Leu Arg Asn Asp Leu Asp Arg Leu Phe Val Lys Val Glu Lys Ile His				
658	663	668	673	
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Glu Lys Val *				
674				
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cgggtcccgcg ccccggcgaa cccagtcgcc ggcccccggc cccggggccca gcttcggc	178
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Met Asp Val Arg Phe Tyr Pro Ala Ala Ala Gly Asp Pro Ala Ser Leu	
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Asp Phe Ala Gln Cys Leu Gly Tyr Tyr Gly Tyr Ser Lys Phe Gly Asn	
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Asn Asn Asn Tyr Met Asn Met Ala Glu Ala Asn Asn Ala Phe Phe Ala	
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Glu Ile Pro Pro Ile Thr Pro Pro Pro Glu Ser Asp Pro Ala Leu Gly	
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Met Pro Asp Val Leu Leu Pro Phe Gln Ala Leu Ser Asp Pro Leu Pro	
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Ser Gln Gly Ser Glu Phe Thr Pro Gln Phe Pro Pro Gln Ser Leu Asp	
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Leu Pro Ser Ile Thr Ile Ser Arg Asn Leu Val Glu Gln Asp Gly Val	
113 118 123 128	
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Gln	Gly	Ala	Glu	Gly	Ala	Leu	Glu	Glu	Val	Pro	Leu	Glu	Val	Leu	Arg	
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Gln	Arg	Glu	Ser	Lys	Trp	Leu	Asp	Met	Leu	Asn	Asn	Trp	Asp	Lys	Trp	
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Met	Ala	Lys	Lys	His	Lys	Lys	Ile	Arg	Leu	Arg	Cys	Gln	Lys	Gly	Ile	
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Pro	Gly	Asp	Pro	Lys	Trp	Leu	Asp	Val	Ile	Glu	Arg	Asp	Leu	His	Arg	
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Glu	Gly	Tyr	Cys	Gln	Ala	Gln	Ala	Pro	Ile	Ala	Ala	Val	Leu	Leu	Met	
193					198					203					208	
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His	Met	Pro	Ala	Glu	Gln	Ala	Phe	Trp	Cys	Leu	Val	Gln	Ile	Cys	Glu	
209					214					219					224	
aag	tac	ctg	ccc	ggc	tac	tac	agc	gag	aaa	ctg						


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cct cag gat ttg gct ccc cag gtc tca gcc cac cac cgc tcc cag gag      1546
Pro Gln Asp Leu Ala Pro Gln Val Ser Ala His His Arg Ser Gln Glu
481                      486                      491                      496

agc ttg acg tcc caa gag agt gag gac acc tac ttg taa ccctggcagc      1595
Ser Leu Thr Ser Gln Glu Ser Glu Asp Thr Tyr Leu  *
497                      502                      507

taaggcctcc agggcgggggt ctccatataa ctacacgggt catgaactga cattccacat  1655

cctgcccacc ctctgagggc caagctgcct ggccactggg ctgggctgga gtctggctgg  1715

tccaacacag attctgcctg gtccaacaca gattctgcct gagcctcctt atttattttc  1775

tttacagtgg cactcagggt ggcccagcca gggcaggcag aagctagggc ctgggggggtg  1835

gggcctcctt cagccccctc ctctggggg atgctcccca gggttagggt gctggtgtga  1895

ggggaaaggg tggggtgttc tttgtgtaaa atagaaacat ggttttgtac agaaataaac  1955

agccttgtat agagaaaaaa aaaaaa                                1981

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<210> 716
<211> 956
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (171)..(764)

<220>
<221> misc_feature
<222> (1)...(956)
<223> n = a,t,c or g

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gcggnnttc gagtcatagt cagtgtggtg gaattcgtag aggtcgcgca ggcgctggta      60

ccccgttggt ccgcgcgttg ctgcgttggt aggggtgtca gtcagtga tcccaggcag      120

ctcttagtgt ggagcagtga actgtgtgtg gttccttcta cttggggatc  atg cag      176
                                   Met Gln
                                   1

aga gct tca cgt ctg aag aga gag ctg cac atg tta gcc aca gag cca      224
Arg Ala Ser Arg Leu Lys Arg Glu Leu His Met Leu Ala Thr Glu Pro
  3                      8                      13                      18

ccc cca ggc atc aca tgt tgg caa gat aaa gac caa atg gat gac ctg      272
Pro Pro Gly Ile Thr Cys Trp Gln Asp Lys Asp Gln Met Asp Asp Leu
 19                      24                      29                      34

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cga gct caa ata tta ggt gga gcc aac aca cct tat gag aaa ggt gtt	320
Arg Ala Gln Ile Leu Gly Gly Ala Asn Thr Pro Tyr Glu Lys Gly Val	
35 40 45 50	
ttt aag cta gaa gtt atc att cct gag agg tac cca ttt gaa cct cct	368
Phe Lys Leu Glu Val Ile Ile Pro Glu Arg Tyr Pro Phe Glu Pro Pro	
51 56 61 66	
cag atc cga ttt ctc act cca att tat cat cca aac att gat tct gct	416
Gln Ile Arg Phe Leu Thr Pro Ile Tyr His Pro Asn Ile Asp Ser Ala	
67 72 77 82	
gga agg att tgt ctg gat gtt ctc aaa ttg cca cca aaa ggt gct tgg	464
Gly Arg Ile Cys Leu Asp Val Leu Lys Leu Pro Pro Lys Gly Ala Trp	
83 88 93 98	
aga cca tcc ctc aac atc gca act gtg ttg acc tct att cag ctg ctc	512
Arg Pro Ser Leu Asn Ile Ala Thr Val Leu Thr Ser Ile Gln Leu Leu	
99 104 109 114	
atg tca gaa ccc aac cct gat gac ccg ctc atg gct gac ata tcc tca	560
Met Ser Glu Pro Asn Pro Asp Asp Pro Leu Met Ala Asp Ile Ser Ser	
115 120 125 130	
gaa ttt aaa tat aat aag cca gcc ttc ctc aag aat gcc aga cag tgg	608
Glu Phe Lys Tyr Asn Lys Pro Ala Phe Leu Lys Asn Ala Arg Gln Trp	
131 136 141 146	
aca gag aag cat gca aga cag aaa caa aag gct gat gag gaa gag atg	656
Thr Glu Lys His Ala Arg Gln Lys Gln Lys Ala Asp Glu Glu Glu Met	
147 152 157 162	
ctt gat aat cta cca gag gct ggt gac tcc aga gta cac aac tca aca	704
Leu Asp Asn Leu Pro Glu Ala Gly Asp Ser Arg Val His Asn Ser Thr	
163 168 173 178	
cag aaa agg aag gcc agt cag cta gta ggc ata gaa aag aaa ttt cat	752
Gln Lys Arg Lys Ala Ser Gln Leu Val Gly Ile Glu Lys Lys Phe His	
179 184 189 194	
cct gat gtt tag ggg acttgctctg. gttcatctta gttaatgtgt tctttgccaa	807
Pro Asp Val *	
195	
ggtgatctaa gttgcctacc ttgaattttt ttttaaatat atttgatgac ataatttttg	867
tgtagtttat ttatcttgta catatgtatt ttgaaatctt ttaaacctga aaaataaata	927
gtcatttaat gttgaaaaaa aaaaagctt	956

<210> 717

<211> 1042

<212> DNA

<213> Homo sapiens

<220>
 <221> CDS
 <222> (71)..(676)

<400> 717

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tcagcccaac  atg gcg atg cac aac aag gcg gcg ccg ccg cag atc ccg      109
             Met Ala Met His Asn Lys Ala Ala Pro Pro Gln Ile Pro
             1             5             10

gac acc cgg cgg gag ctg gcg gag ctc gtg aag cgg aag cag gag ctg      157
Asp Thr Arg Arg Glu Leu Ala Glu Leu Val Lys Arg Lys Gln Glu Leu
14             19             24             29

gcg gaa aca ttg gca aat ttg gag cga cag atc tat gct ttt gag gga      205
Ala Glu Thr Leu Ala Asn Leu Glu Arg Gln Ile Tyr Ala Phe Glu Gly
30             35             40             45

agc tac ctg gaa gac act cag atg tat ggc aat att att cgt ggc tgg      253
Ser Tyr Leu Glu Asp Thr Gln Met Tyr Gly Asn Ile Ile Arg Gly Trp
46             51             56             61

gat cgg tat ctg acc aac caa aaa aac tcc aat agc aaa aat gat cga      301
Asp Arg Tyr Leu Thr Asn Gln Lys Asn Ser Asn Ser Lys Asn Asp Arg
62             67             72             77

agg aac cgg aag ttt aag gaa gct gag cgg ctc ttc agt aaa tcc tcg      349
Arg Asn Arg Lys Phe Lys Glu Ala Glu Arg Leu Phe Ser Lys Ser Ser
78             83             88             93

gtt acc tca gca gct gca gta agt gca ttg gca gga gtt cag gac cag      397
Val Thr Ser Ala Ala Ala Val Ser Ala Leu Ala Gly Val Gln Asp Gln
94             99             104             109

ctc att gaa aag agg gag cca gga agt ggg acg gaa agt gac act tct      445
Leu Ile Glu Lys Arg Glu Pro Gly Ser Gly Thr Glu Ser Asp Thr Ser
110            115            120            125

cca gac ttc cac aat cag gaa aat gag ccc agc cag gag gac cct gag      493
Pro Asp Phe His Asn Gln Glu Asn Glu Pro Ser Gln Glu Asp Pro Glu
126            131            136            141

gat ctg gat gga tct gtg cag gga gtg aaa cct cag aag gct gct tct      541
Asp Leu Asp Gly Ser Val Gln Gly Val Lys Pro Gln Lys Ala Ala Ser
142            147            152            157

tct act tcc tca ggg agt cac cac agc agc cat aaa aag cga aag aat      589
Ser Thr Ser Ser Gly Ser His His Ser Ser His Lys Lys Arg Lys Asn
158            163            168            173

aaa aac cgg cac agc ccg tct ggc atg ttt gat tat gac ttt gag att      637
Lys Asn Arg His Ser Pro Ser Gly Met Phe Asp Tyr Asp Phe Glu Ile
174            179            184            189

gat ctg aag tta aac aaa aaa cca cga gct gac tat tag aagacacatt      686

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Asp Leu Lys Leu Asn Lys Lys Pro Arg Ala Asp Tyr *
 190 195 200

agtgcagaag cttccaggct gtagagccct gcttcccttc tctgacctca caaagataaa 746
 catccttcac ctgagttcgt ggccatccac ctctgctctc ccagaccag tgccctgtgac 806
 tttgagtagt ttgttctaaa tgtggtgaca aacaagtcac ttctgtaaga cattgggtct 866
 tactttatgt catttttagt aacagaactg caggaagatc aagacaatgt tgtaatcccg 926
 gcaagttgct aactgtgctt ttctcccttc ttagaatgaa tgtctcccc aaaactggct 986
 ggcaccagct tcattctgtga tacccttcaa gaaatgttct ctggttttct tttatg 1042

<210> 718
 <211> 1012
 <212> DNA
 <213> Homo sapiens
 <220>
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 <222> (71)..(646)

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 tcagcccaac atg gcg atg cac aac aag gcg gcg ccg ccg cag atc ccg 109
 Met Ala Met His Asn Lys Ala Ala Pro Pro Gln Ile Pro
 1 5 10
 gac acc cgg cgg gag ctg gcg gag ctc gtg aag cgg aag cag gag ctg 157
 Asp Thr Arg Arg Glu Leu Ala Glu Leu Val Lys Arg Lys Gln Glu Leu
 14 19 24 29
 gcg gaa aca ttg gca aat ttg gag cga cag atc tat gct ttt gag gga 205
 Ala Glu Thr Leu Ala Asn Leu Glu Arg Gln Ile Tyr Ala Phe Glu Gly
 30 35 40 45
 agc tac ctg gaa gac act cag atg tat ggc aat att att cgt ggc tgg 253
 Ser Tyr Leu Glu Asp Thr Gln Met Tyr Gly Asn Ile Ile Arg Gly Trp
 46 51 56 61
 gat cgg tat ctg acc aac caa aaa aac tcc aat agc aaa aat gat cga 301
 Asp Arg Tyr Leu Thr Asn Gln Lys Asn Ser Asn Ser Lys Asn Asp Arg
 62 67 72 77
 agg aac cgg aag ttt aag gaa gct gag cgg ctc ttc agt aaa tcc tcg 349
 Arg Asn Arg Lys Phe Lys Glu Ala Glu Arg Leu Phe Ser Lys Ser Ser
 78 83 88 93
 gtt acc tca gca gct gca gta agt gca ttg gca gga gtt cag gac cag 397
 Val Thr Ser Ala Ala Ala Val Ser Ala Leu Ala Gly Val Gln Asp Gln
 94 99 104 109

ctc att gaa aag agg gag cca gga agt ggg acg gaa agt gac act tct 445
 Leu Ile Glu Lys Arg Glu Pro Gly Ser Gly Thr Glu Ser Asp Thr Ser
 110 115 120 125

cca gac ttc cac aat cag gaa aat gag ccc agc cag gag gac cct gag 493
 Pro Asp Phe His Asn Gln Glu Asn Glu Pro Ser Gln Glu Asp Pro Glu
 126 131 136 141

gat ctg gat gga tct gtg cag gga gtg aaa cct cag aag gct gct tct 541
 Asp Leu Asp Gly Ser Val Gln Gly Val Lys Pro Gln Lys Ala Ala Ser
 142 147 152 157

tct act tcc tca ggg agt cac cac agc agc cat aaa aag cga aag aat 589
 Ser Thr Ser Ser Gly Ser His His Ser Ser His Lys Lys Arg Lys Asn
 158 163 168 173

aaa aac cgg cac agg att gat ctg aag tta aac aaa aaa cca cga gct 637
 Lys Asn Arg His Arg Ile Asp Leu Lys Leu Asn Lys Lys Pro Arg Ala
 174 179 184 189

gac tat tag aagacac attagtgcag aagcttccag gctgtagagc cctgcttccc 693
 Asp Tyr *
 190

ttctctgacc tcacaaagat aaacatcctt cacctgagtt cgtggccatc cacctctgct 753

ctcccagacc cagtgcctgt gaetttgagt agtttgttct aaatgtggtg acaaacaagt 813

catttctgta agacattggg tcttacttta tgtcattttt agtaacagaa ctgcaaggaa 873

atcaagacaa tgttgtaatc ccggcaagtt gctaactgtg cgtttctccc ttcttagaat 933

gaatgtctcc cccaaaactg gctggcacca gcttcatctg tgataccctt caagaaatgt 993

tctctggttt tgttttatg 1012

<210> 719
 <211> 772
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (16)..(684)

<400> 719
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 Met His Ala Tyr Val Ser Leu Asp Pro Leu Glu Arg
 1 5 10 |

ccg cct act act act aaa ttc gcg gcc gcg tcg acg agg aag /agg gcg 99
 Pro Pro Thr Thr Thr Lys Phe Ala Ala Ala Ser Thr Arg Lys Arg Ala
 13 18 23 28

gcg acg gtg gtg gtg act gag cgg ccc ggt gac agg atg ttg gtg ttg	147
Ala Thr Val Val Val Thr Glu Arg Pro Gly Asp Arg Met Leu Val Leu	
29 34 39 44	
gta tta gga gat ctg cac atc cca cac cgg tgc aac agt ttg cca gct	195
Val Leu Gly Asp Leu His Ile Pro His Arg Cys Asn Ser Leu Pro Ala	
45 50 55 60	
aaa ttc aaa aaa ctc ctg gtg cca gga aaa att cag cac att ctc tgc	243
Lys Phe Lys Lys Leu Leu Val Pro Gly Lys Ile Gln His Ile Leu Cys	
61 66 71 76	
aca gga aac ctt tgc acc aaa gag agt tat gac tat ctc aag act ctg	291
Thr Gly Asn Leu Cys Thr Lys Glu Ser Tyr Asp Tyr Leu Lys Thr Leu	
77 82 87 92	
gct ggt gat gtt cat att gtg aga gga gac ttc gat gag aat ctg aat	339
Ala Gly Asp Val His Ile Val Arg Gly Asp Phe Asp Glu Asn Leu Asn	
93 98 103 108	
tat cca gaa cag aaa gtt gtg act gtt gga cag ttc aaa att ggt ctg	387
Tyr Pro Glu Gln Lys Val Val Thr Val Gly Gln Phe Lys Ile Gly Leu	
109 114 119 124	
atc cat gga cat caa gtt att cca tgg gga gat atg gcc agc tta gcc	435
Ile His Gly His Gln Val Ile Pro Trp Gly Asp Met Ala Ser Leu Ala	
125 130 135 140	
ctg ttg cag agg caa ttt gat gtg gac att ctt atc tcg gga cac aca	483
Leu Leu Gln Arg Gln Phe Asp Val Asp Ile Leu Ile Ser Gly His Thr	
141 146 151 156	
cac aaa ttt gaa gca ttt gag cat gaa aat aaa ttc tac att aat cca	531
His Lys Phe Glu Ala Phe Glu His Glu Asn Lys Phe Tyr Ile Asn Pro	
157 162 167 172	
ggt tct gcc act ggg gca tat aat gcc ttg gaa aca aac att att cca	579
Gly Ser Ala Thr Gly Ala Tyr Asn Ala Leu Glu Thr Asn Ile Ile Pro	
173 178 183 188	
tca ttt gtg ttg atg gat atc cag gct tct aca gtg gtc acc tat gtg	627
Ser Phe Val Leu Met Asp Ile Gln Ala Ser Thr Val Val Thr Tyr Val	
189 194 199 204	
tat cag cta att gga gat gat gtg aaa gta gaa cga atc gaa tac aaa	675
Tyr Gln Leu Ile Gly Asp Asp Val Lys Val Glu Arg Ile Glu Tyr Lys	
205 210 215 220	
aaa cct taa agccagg cctgtcttga tgatttttgg ttttttttca ttgtcctgtt	731
Lys Pro *	
221	
gaaatcaagt aattaaacat ttaagagcca aaaaaaaaaa a	772

<210> 720
 <211> 1055
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (257)..(706)

<400> 720

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actccggatt tttcgggtcg acccacgcgt ccgcggtgac tgcaccgccc gccctgccag      60
acccgcccgg aacgggggtc gtcgccgcca gtagccgcag caccgcagcc ttgggcctcg      120
cgccggctat ggccgtgccc tggggctgag ccctcagggt gtgaccgaga ttcccgacga      180
gagagactga ggggaagaga ggaaggaggg gcgggctcct ggcaaggcat tcgctcctga      240
gcggaatcct gcaaag      atg gag aag gag gag aca acc cgg gag ctg ctg      289
                        Met Glu Lys Glu Glu Thr Thr Arg Glu Leu Leu
                        1                      5

ctg ccc aac tgg cag ggt agt ggc tcc cac ggg ctg acc atc gcc cag      337
Leu Pro Asn Trp Gln Gly Ser Gly Ser His Gly Leu Thr Ile Ala Gln
12                      17                      22                      27

agg gac gac ggc gtc ttt gtg cag gag gtg acg cag aac tcc cct gcg      385
Arg Asp Asp Gly Val Phe Val Gln Glu Val Thr Gln Asn Ser Pro Ala
28                      33                      38                      43

gcc cgc act ggg gtg gtc aag gag ggg gac cag att gtg ggt gcc acc      433
Ala Arg Thr Gly Val Val Lys Glu Gly Asp Gln Ile Val Gly Ala Thr
44                      49                      54                      59

atc tac ttt gac aac ctg cag tcg ggt gag gtg acc cag ctg ctg aac      481
Ile Tyr Phe Asp Asn Leu Gln Ser Gly Glu Val Thr Gln Leu Leu Asn
60                      65                      70                      75

acc atg ggg cac cac acg gtg ggc ctg aag ctg cac cgc aag ggg gac      529
Thr Met Gly His His Thr Val Gly Leu Lys Leu His Arg Lys Gly Asp
76                      81                      86                      91

cgc tct ccc gag cct ggc cag acc tgg acc cgt gaa gtc ttc agc tcc      577
Arg Ser Pro Glu Pro Gly Gln Thr Trp Thr Arg Glu Val Phe Ser Ser
92                      97                      102                      107

tgc agc tct gaa gtg gtt ctg aac aca cca cag cca tca gca ctg gaa      625
Cys Ser Ser Glu Val Val Leu Asn Thr Pro Gln Pro Ser Ala Leu Glu
108                      113                      118                      123

tgc aaa gac cag aac aaa cag aag gaa gcc agc agc caa gcc ggg gca      673
Cys Lys Asp Gln Asn Lys Gln Lys Glu Ala Ser Ser Gln Ala Gly Ala
124                      129                      134                      139

gtt tca gtc tcc acc cca aat gca gga ctg tag aagcggcc aggaagaaaa      724
Val Ser Val Ser Thr Pro Asn Ala Gly Leu *
```

140	145	150	
ccacccccctc ttaaggttgt ttttgtgacc gttcttttga gcattgttct aaaaatggga	784		
aattacatat tgctgtgcca agggcaacaa acacctgcag ttaaaggaat accttccgcg	844		
aggcgggcttt tcggagcatg catgtttata gctccagcca ggccagaccg agggctgctg	904		
cataagccct gcttgggtgca tttctttact tgcaagggga cagagtgtgg gcttaggttt	964		
gggactagag ggggctttgg caactatggt gctcaggtaga ttatccttcg ctcgtttatc	1024		
caataaacat ttatcaagca aaaaaaaaaa a	1055		

<210> 721
 <211> 5571
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (274) .. (2760)

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aaatttctctg ccgattatat aaaatactgg gagtttgcag tttatctgga agaattgtgaa	120
ctggctaaac agctttatcc aaaggaaaac gatttgggtgt ttttagctcc tgagagaata	180
aatgaagaga agaaagatac agagagaaat gacatacaag atctccacga atatcattct	240
ggttatgttc ataaatttcg ccgcacgtca gtc atg cgt aat ggg aaa act gag	294
Met Arg Asn Gly Lys Thr Glu	
1 5	
tgt tac ctt tcc atc cag act caa gag aac ttt ccg gcc aat tta aac	342
Cys Tyr Leu Ser Ile Gln Thr Gln Glu Asn Phe Pro Ala Asn Leu Asn	
8 13 18 23	
gaa ctt gtg aat tgt att gta atc agt tct ctg gta act aca caa agg	390
Glu Leu Val Asn Cys Ile Val Ile Ser Ser Leu Val Thr Thr Gln Arg	
24 29 34 39	
aag ttg aaa gcc atg tct ctg ttg ggt agt cgg aac caa ctg gct aga	438
Lys Leu Lys Ala Met Ser Leu Leu Gly Ser Arg Asn Gln Leu Ala Arg	
40 45 50 55	
gct gtt ctg aat cca aac cct atg gac ttc tgt aca aaa gat tta ctg	486
Ala Val Leu Asn Pro Asn Pro Met Asp Phe Cys Thr Lys Asp Leu Leu	
56 61 66 71	
act aca aca tct gag aga att att gcg tac tta aga gat ttc aat gaa	534
Thr Thr Thr Ser Glu Arg Ile Ile Ala Tyr Leu Arg Asp Phe Asn Glu	

72	77	82	87
gat caa aag aaa gca ata gaa act gca tat gct atg gtg aaa cac tca Asp Gln Lys Lys Ala Ile Glu Thr Ala Tyr Ala Met Val Lys His Ser 88 93 98 103	582		
cca tca gtt gcc aaa atc tgc ttg att cat gga cca cct gga aca gga Pro Ser Val Ala Lys Ile Cys Leu Ile His Gly Pro Pro Gly Thr Gly 104 109 114 119	630		
aaa tca aaa act att gtt ggc ctc ctc tat cgt cta ctg aca gag aac Lys Ser Lys Thr Ile Val Gly Leu Leu Tyr Arg Leu Leu Thr Glu Asn 120 125 130 135	678		
cag agg aag ggg cat tca gac gaa aac tcc aat gcc aaa atc aaa caa Gln Arg Lys Gly His Ser Asp Glu Asn Ser Asn Ala Lys Ile Lys Gln 136 141 146 151	726		
aac cgt gtc ctc gtg tgt gca cct tcc aat gca gct gtt gat gaa ctc Asn Arg Val Leu Val Cys Ala Pro Ser Asn Ala Ala Val Asp Glu Leu 152 157 162 167	774		
atg aaa aaa att atc ctt gaa ttc aaa gaa aaa tgt aaa gac aag aag Met Lys Lys Ile Ile Leu Glu Phe Lys Glu Lys Cys Lys Asp Lys Lys 168 173 178 183	822		
aat cct tta gga aac tgt gga gat ata aat tta gta cga ctg ggt cca Asn Pro Leu Gly Asn Cys Gly Asp Ile Asn Leu Val Arg Leu Gly Pro 184 189 194 199	870		
gaa aag tct att aat agt gag gtt cta aag ttc agt ttg gac agc caa Glu Lys Ser Ile Asn Ser Glu Val Leu Lys Phe Ser Leu Asp Ser Gln 200 205 210 215	918		
gta aac cac aga atg aaa aaa gag tta cct tct cat gtt cag gcg atg Val Asn His Arg Met Lys Lys Glu Leu Pro Ser His Val Gln Ala Met 216 221 226 231	966		
cat aaa aga aag gaa ttt cta gat tat cag ctg gat gag ctt tcc cgg His Lys Arg Lys Glu Phe Leu Asp Tyr Gln Leu Asp Glu Leu Ser Arg 232 237 242 247	1014		
cag cga gct cta tgc cga ggt gga cgg gaa ata cag agg caa gaa tta Gln Arg Ala Leu Cys Arg Gly Gly Arg Glu Ile Gln Arg Gln Glu Leu 248 253 258 263	1062		
gat gaa aac att tcc aaa gtt tct aag gaa agg cag gaa ctt gct tct Asp Glu Asn Ile Ser Lys Val Ser Lys Glu Arg Gln Glu Leu Ala Ser 264 269 274 279	1110		
aaa att aaa gag gtt caa gga cgc cca cag aaa aca cag agt atc atc Lys Ile Lys Glu Val Gln Gly Arg Pro Gln Lys Thr Gln Ser Ile Ile 280 285 290 295	1158		
atc tta gag tcc cat atc atc tgc tgc acg ttg agc aca agt ggt ggt Ile Leu Glu Ser His Ile Ile Cys Cys Thr Leu Ser Thr Ser Gly Gly 296 301 306 311	1206		

tta cta ctt gag tct gct ttc cgt ggg caa ggg ggt gtc ccc ttc agc	1254
Leu Leu Leu Glu Ser Ala Phe Arg Gly Gln Gly Gly Val Pro Phe Ser	
312 317 322 327	
tgt gtc att gtt gat gag gct gga cag tct tgt gaa att gag act ctt	1302
Cys Val Ile Val Asp Glu Ala Gly Gln Ser Cys Glu Ile Glu Thr Leu	
328 333 338 343	
act cca ctc atc cat cgc tgc aat aag ctc atc cta gta gga gat cct	1350
Thr Pro Leu Ile His Arg Cys Asn Lys Leu Ile Leu Val Gly Asp Pro	
344 349 354 359	
aag cag ctc cct ccg aca gtc atc tct atg aaa gca cag gag tat ggc	1398
Lys Gln Leu Pro Pro Thr Val Ile Ser Met Lys Ala Gln Glu Tyr Gly	
360 365 370 375	
tac gac cag tca atg atg gct cgc ttc tgc aga ctg ctg gaa gag aat	1446
Tyr Asp Gln Ser Met Met Ala Arg Phe Cys Arg Leu Leu Glu Glu Asn	
376 381 386 391	
gta gaa cac aac atg atc agc agg ctg ccc att cta cag ctc act gtt	1494
Val Glu His Asn Met Ile Ser Arg Leu Pro Ile Leu Gln Leu Thr Val	
392 397 402 407	
cag tac agg atg cat cca gac ata tgc ctc ttc cct tct aat tat gtt	1542
Gln Tyr Arg Met His Pro Asp Ile Cys Leu Phe Pro Ser Asn Tyr Val	
408 413 418 423	
tat aac aga aac tta aaa aca aat aga cag aca gaa gcc att cga tgt	1590
Tyr Asn Arg Asn Leu Lys Thr Asn Arg Gln Thr Glu Ala Ile Arg Cys	
424 429 434 439	
tca tca gat tgg cca ttt cag cca tac ctt gtg ttt gat gtt gga gat	1638
Ser Ser Asp Trp Pro Phe Gln Pro Tyr Leu Val Phe Asp Val Gly Asp	
440 445 450 455	
ggg tca gaa aga cgg gat aat gac tca tat ata aat gtt caa gaa ata	1686
Gly Ser Glu Arg Arg Asp Asn Asp Ser Tyr Ile Asn Val Gln Glu Ile	
456 461 466 471	
aaa ctg gtg atg gaa ata att aag ctt att aaa gac aaa aga aag gat	1734
Lys Leu Val Met Glu Ile Ile Lys Leu Ile Lys Asp Lys Arg Lys Asp	
472 477 482 487	
gtt agt ttt cga aac att ggc ata ata act cat tac aag gcc cag aag	1782
Val Ser Phe Arg Asn Ile Gly Ile Ile Thr His Tyr Lys Ala Gln Lys	
488 493 498 503	
acg atg att cag aag gat ttg gac aaa gag ttc gat aga aaa gga cca	1830
Thr Met Ile Gln Lys Asp Leu Asp Lys Glu Phe Asp Arg Lys Gly Pro	
504 509 514 519	
gca gaa gta gac act gtg gat gca ttc cag ggt cgg cag aag gat tgt	1878
Ala Glu Val Asp Thr Val Asp Ala Phe Gln Gly Arg Gln Lys Asp Cys	
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Val Ile Val Thr Cys Val Arg Ala Asn Ser Ile Gln Gly Ser Ile Gly	
536 541 546 551	
ttc ctg gca agt ttg cag aga ttg aat gtc acc atc aca cga gcc aag	1974
Phe Leu Ala Ser Leu Gln Arg Leu Asn Val Thr Ile Thr Arg Ala Lys	
552 557 562 567	
tac agc ctc ttc atc ctc gga cat ttg agg acc ctg atg gaa aac cag	2022
Tyr Ser Leu Phe Ile Leu Gly His Leu Arg Thr Leu Met Glu Asn Gln	
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cat tgg aat cag ctg att cag gat gct cag aag cgt ggt gcc att att	2070
His Trp Asn Gln Leu Ile Gln Asp Ala Gln Lys Arg Gly Ala Ile Ile	
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Lys Thr Cys Asp Lys Asn Tyr Arg His Asp Ala Val Lys Ile Leu Lys	
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Leu Lys Pro Val Leu Gln Arg Ser Leu Thr His Pro Pro Thr Ile Ala	
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Pro Glu Gly Ser Arg Pro Gln Gly Gly Leu Pro Ser Ser Lys Leu Asp	
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Ser Gly Phe Ala Lys Thr Ser Val Ala Ala Ser Leu Tyr His Thr Pro	
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Ser Asp Ser Lys Glu Ile Thr Leu Thr Val Thr Ser Lys Asp Pro Glu	
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Phe Pro Val Val His Gln Asp Leu Ser His Ile Gln Gln Pro Ala Ala	
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Pro Ala Ala Ser Pro Glu Ala Ser Thr Cys Gln Ser Lys Cys Asp Asp	
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Ser Arg Trp Asp Lys Arg Thr Leu Glu Gln Glu Asp Ser Ser Ser Lys	
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Lys Arg Lys Leu Leu *	
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 <222> (557) .. (1312)

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 gctgccgacg gcagctatag acattctgct tcaggtccgg gctcctggac ttgccttttc 240
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 ggacttgccc tcctcc atg gca cac cgg ctg cag ata cga ctg ctg acg 589
 Met Ala His Arg Leu Gln Ile Arg Leu Leu Thr
 1 5
 tgg gat gtg aag gac acg ctg ctc agg ctc cgc cac ccc tta ggg gag 637
 Trp Asp Val Lys Asp Thr Leu Leu Arg Leu Arg His Pro Leu Gly Glu
 12 17 22 27
 gcc tat gcc acc aag gcc cgg gcc cat ggg ctg gag gtg gag ccc tca 685
 Ala Tyr Ala Thr Lys Ala Arg Ala His Gly Leu Glu Val Glu Pro Ser
 28 33 38 43
 gcc ctg gaa caa ggc ttc agg cag gca tac agg gct cag agc cac agc 733
 Ala Leu Glu Gln Gly Phe Arg Gln Ala Tyr Arg Ala Gln Ser His Ser
 44 49 54 59
 ttc ccc aac tac ggc ctg agc cac ggc cta acc tcc cgc cag tgg tgg 781
 Phe Pro Asn Tyr Gly Leu Ser His Gly Leu Thr Ser Arg Gln Trp Trp
 60 65 70 75
 ctg gat gtg gtc ctg cag acc ttc cac ctg gcg ggt gtc cag gat gct 829
 Leu Asp Val Val Leu Gln Thr Phe His Leu Ala Gly Val Gln Asp Ala

76	81	86	91	
cag gct gta gcc ccc atc gct gaa cag ctt tat aaa gac ttc agc cac				877
Gln Ala Val Ala Pro Ile Ala Glu Gln Leu Tyr Lys Asp Phe Ser His				
92	97	102	107	
ccc tgc acc tgg cag gtg ttg gat ggg gct gag gac acc ctg agg gag				925
Pro Cys Thr Trp Gln Val Leu Asp Gly Ala Glu Asp Thr Leu Arg Glu				
108	113	118	123	
tgc cgc aca cgg ggt ctg aga ctg gca gtg atc tcc aac ttt gac cga				973
Cys Arg Thr Arg Gly Leu Arg Leu Ala Val Ile Ser Asn Phe Asp Arg				
124	129	134	139	
cgg cta gag ggc atc ctg ggg ggc ctt ggc ctg cgt gaa cac ttc gac				1021
Arg Leu Glu Gly Ile Leu Gly Gly Leu Gly Leu Arg Glu His Phe Asp				
140	145	150	155	
ttt gtg ctg acc tcc gag gct gct ggc tgg ccc aag ccg gac ccc cgc				1069
Phe Val Leu Thr Ser Glu Ala Ala Gly Trp Pro Lys Pro Asp Pro Arg				
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att ttc cag gag gcc ttg cgg ctt gct cat atg gaa cca gta gtg gca				1117
Ile Phe Gln Glu Ala Leu Arg Leu Ala His Met Glu Pro Val Val Ala				
172	177	182	187	
gcc cat gtt ggg gat aat tac ctc tgc gat tac cag ggg cct cgg gct				1165
Ala His Val Gly Asp Asn Tyr Leu Cys Asp Tyr Gln Gly Pro Arg Ala				
188	193	198	203	
gtg ggc atg cac agc ttc ctg gtg gtt ggc cca cag gca ctg gac ccc				1213
Val Gly Met His Ser Phe Leu Val Val Gly Pro Gln Ala Leu Asp Pro				
204	209	214	219	
gtg gtc agg gat tct gta cct aaa gaa cac atc ctc ccc tct ctg gcc				1261
Val Val Arg Asp Ser Val Pro Lys Glu His Ile Leu Pro Ser Leu Ala				
220	225	230	235	
cat ctc ctg cct gcc ctt gac tgc cta gag ggc tca act cca ggg ctt				1309
His Leu Leu Pro Ala Leu Asp Cys Leu Glu Gly Ser Thr Pro Gly Leu				
236	241	246	251	
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*				
252				
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<400> 723

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tctaag  atg gcg gca gtg gca acc tgc ggt agt gtt gcc gcg agt act      168
        Met Ala Ala Val Ala Thr Cys Gly Ser Val Ala Ala Ser Thr
          1             5             10

ggg tct gca gtg gcg aca gcc agc aag agc aac gtc acc agt ttc cag      216
Gly Ser Ala Val Ala Thr Ala Ser Lys Ser Asn Val Thr Ser Phe Gln
  15             20             25             30

agg agg ggt cct aga gcc agc gtg acc aac gac agc ggc cct cga ctg      264
Arg Arg Gly Pro Arg Ala Ser Val Thr Asn Asp Ser Gly Pro Arg Leu
  31             36             41             46

gtg tcc att gcg ggc acg cga ccg tcg gtg cgg aat gga cag ctg ctg      312
Val Ser Ile Ala Gly Thr Arg Pro Ser Val Arg Asn Gly Gln Leu Leu
  47             52             57             62

gta tca acc ggg ctc cca gcc cta gac cag ctc tta ggt gga ggt tta      360
Val Ser Thr Gly Leu Pro Ala Leu Asp Gln Leu Leu Gly Gly Gly Leu
  63             68             73             78

gcc gtt gga aca gtt ctt cta att gag gag gat aaa tat aat att tac      408
Ala Val Gly Thr Val Leu Leu Ile Glu Glu Asp Lys Tyr Asn Ile Tyr
  79             84             89             94

tca cct ttg ctc ttc aag tat ttc ctg gca gaa gga att gtc aat ggg      456
Ser Pro Leu Leu Phe Lys Tyr Phe Leu Ala Glu Gly Ile Val Asn Gly
  95             100            105            110

cat act ttg ttg gtt gca tct gct aaa gag gat cct gcc aac att tta      504
His Thr Leu Leu Val Ala Ser Ala Lys Glu Asp Pro Ala Asn Ile Leu
  111            116            121            126

cag gaa ctt cca gca cca tta ctt gat gat aaa tgt aaa aag gaa ttt      552
Gln Glu Leu Pro Ala Pro Leu Leu Asp Asp Lys Cys Lys Lys Glu Phe
  127            132            137            142

gat gaa gat gta tac aat cat aaa aca cca gaa tct aat att aag atg      600
Asp Glu Asp Val Tyr Asn His Lys Thr Pro Glu Ser Asn Ile Lys Met
  143            148            153            158

aaa ata gct tgg cgt tac cag tta tta ccc aag atg gag att gga cca      648
Lys Ile Ala Trp Arg Tyr Gln Leu Leu Pro Lys Met Glu Ile Gly Pro
  159            164            169            174

gta tca tct tca aga ttt ggt cac tat tat gat gca tca aaa aga atg      696

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94 99 104 109	
ctg cag cag atc cag gat gcc aga aac cat gtg agc caa gcc att tac	504
Leu Gln Gln Ile Gln Asp Ala Arg Asn His Val Ser Gln Ala Ile Tyr	
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ctg ctt acc agc cgg gac cag agc tac cag ttc aag acg ggc gct gag	552
Leu Leu Thr Ser Arg Asp Gln Ser Tyr Gln Phe Lys Thr Gly Ala Glu	
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Val Leu Lys Leu Met Asp Ala Val Met Leu Gln Leu Thr Arg Ala Arg	
142 147 152 157	
aac cgg ctc acc acc ccc gcc acc ctc acc ctc ccc gag atc gcc gcc	648
Asn Arg Leu Thr Thr Pro Ala Thr Leu Thr Leu Pro Glu Ile Ala Ala	
158 163 168 173	
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Ser Gly Leu Thr Arg Met Phe Ala Pro Ala Leu Pro Ser Asp Leu Leu	
174 179 184 189	
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Val Asn Val Tyr Ile Asn Leu Asn Lys Leu Cys Leu Thr Val Tyr Gln	
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ctg cat gcc ctg cag ccc aac tcc acc aag aac ttc cgc cca gct ggg	792
Leu His Ala Leu Gln Pro Asn Ser Thr Lys Asn Phe Arg Pro Ala Gly	
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Gly Ala Val Leu His Ser Pro Gly Ala Met Phe Glu Trp Gly Ser Gln	
222 227 232 237	
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Arg Leu Glu Val Ser His Val His Lys Val Glu Cys Val Ile Pro Trp	
238 243 248 253	
ctc aac gac gcc ctg gtc tac ttc acc gtc tcc ctg cag ctc tgc cag	936
Leu Asn Asp Ala Leu Val Tyr Phe Thr Val Ser Leu Gln Leu Cys Gln	
254 259 264 269	
cag ctc aag gac aag atc tcc gtg ttc tcc agc tac tgg agc tac aga	984
Gln Leu Lys Asp Lys Ile Ser Val Phe Ser Ser Tyr Trp Ser Tyr Arg	
270 275 280 285	
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Pro Phe *	
286	
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cccccccct accccaccta acacatttgc actgccagga atggacactg gaagtgccag	1160
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atg gaa tcc gtc acc ttt gag gat gtg gcc gtg gag ttc atc cag gag 168
Met Glu Ser Val Thr Phe Glu Asp Val Ala Val Glu Phe Ile Gln Glu
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Trp Ala Leu Leu Asp Ser Ala Arg Arg Ser Leu Cys Lys Tyr Arg Met
17 22 27 32
ctt gac cag tgc agg acc ctg gcc tcc agg gga act cca cca tgc aaa 264
Leu Asp Gln Cys Arg Thr Leu Ala Ser Arg Gly Thr Pro Pro Cys Lys
33 38 43 48
ccc agt tgt gtc tcc cag ctg ggg caa aga gca gag cca aag gca aca 312
Pro Ser Cys Val Ser Gln Leu Gly Gln Arg Ala Glu Pro Lys Ala Thr
49 54 59 64
gaa cga ggg att ctc cgt gcc aca ggt gtt gcc tgg gaa tct caa ctt 360
Glu Arg Gly Ile Leu Arg Ala Thr Gly Val Ala Trp Glu Ser Gln Leu
65 70 75 80
aaa ccc gaa gag ttg cct tct atg cag gat ctt ttg gaa gaa gca tcc 408
Lys Pro Glu Glu Leu Pro Ser Met Gln Asp Leu Leu Glu Glu Ala Ser
81 86 91 96
tcc agg gac atg caa atg ggg ccg ggg ctg ttc ctg agg atg cag ctg 456
Ser Arg Asp Met Gln Met Gly Pro Gly Leu Phe Leu Arg Met Gln Leu
97 102 107 112
gtg ccc tcc ata gaa gag agg gag aca cca ttg act cga gag gac cgg 504

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Val	Pro	Ser	Ile	Glu	Glu	Arg	Glu	Thr	Pro	Leu	Thr	Arg	Glu	Asp	Arg		
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Pro	Ala	Leu	Gln	Glu	Pro	Pro	Trp	Ser	Leu	Gly	Cys	Thr	Gly	Leu	Lys		
129					134					139					144		
gcc	gct	atg	cag	att	cag	agg	gtg	gtg	ata	cca	gtg	cct	aca	ctg	ggc		600
Ala	Ala	Met	Gln	Ile	Gln	Arg	Val	Val	Ile	Pro	Val	Pro	Thr	Leu	Gly		
145					150					155					160		
cac	cgc	aac	cca	tgg	gtg	gcc	agg	gat	tct	ggg	gag	tga	gtgctgcgtg				649
His	Arg	Asn	Pro	Trp	Val	Ala	Arg	Asp	Ser	Gly	Glu	*					
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111																	
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tcc	cag	tca	atc	cct	aga	ttt	att	aag	gaa	tca	cta	aaa	caa	att	ctt		159
Ser	Gln	Ser	Ile	Pro	Arg	Phe	Ile	Lys	Glu	Ser	Leu	Lys	Gln	Ile	Leu		
9					14					19					24		
gag	gag	agt	gac	tct	agg	cag	atc	ttt	tac	ttc	ttg	tgc	ttg	aat	ctg		207
Glu	Glu	Ser	Asp	Ser	Arg	Gln	Ile	Phe	Tyr	Phe	Leu	Cys	Leu	Asn	Leu		
25					30					35					40		

ctt ttt acc ttt gtg gaa tta ttc tat ggc gtg ctg acc aat agt ctg	255
Leu Phe Thr Phe Val Glu Leu Phe Tyr Gly Val Leu Thr Asn Ser Leu	
41 46 51 56	
ggc ctg atc tcg gat gga ttc cac atg ctt ttt gac tgc tct gct tta	303
Gly Leu Ile Ser Asp Gly Phe His Met Leu Phe Asp Cys Ser Ala Leu	
57 62 67 72	
gtc atg gga ctt ttt gct gcc ctg atg agt agg tgg aaa gcc act cgg	351
Val Met Gly Leu Phe Ala Ala Leu Met Ser Arg Trp Lys Ala Thr Arg	
73 78 83 88	
att ttc tcc tat ggg tac ggc cga ata gaa att ctg tct gga ttt att	399
Ile Phe Ser Tyr Gly Tyr Gly Arg Ile Glu Ile Leu Ser Gly Phe Ile	
89 94 99 104	
aat gga ctt ttt cta ata gta ata gcg ttt ttt gtg ttt atg gag tca	447
Asn Gly Leu Phe Leu Ile Val Ile Ala Phe Phe Val Phe Met Glu Ser	
105 110 115 120	
gtg gct aga ttg att gat cct cca gaa tta gac act cac atg tta aca	495
Val Ala Arg Leu Ile Asp Pro Pro Glu Leu Asp Thr His Met Leu Thr	
121 126 131 136	
cca gtc tca gtt gga ggg ctg ata gta aac ctt att ggt atc tgt gcc	543
Pro Val Ser Val Gly Gly Leu Ile Val Asn Leu Ile Gly Ile Cys Ala	
137 142 147 152	
ttt agc cat gcc cat agc cat gcc cat gga gct tct caa gga agc tgt	591
Phe Ser His Ala His Ser His Ala His Gly Ala Ser Gln Gly Ser Cys	
153 158 163 168	
cac tca tct gat cac agc cat tca cat cat atg cat gga cac agt gac	639
His Ser Ser Asp His Ser His Ser His His Met His Gly His Ser Asp	
169 174 179 184	
cat ggg cat ggt cac agc cac gga tct gcg ggt gga ggc atg aat gct	687
His Gly His Gly His Ser His Gly Ser Ala Gly Gly Gly Met Asn Ala	
185 190 195 200	
aac atg agg ggt gta ttt cta cat gtt ttg gca gat act ctt ggc agc	735
Asn Met Arg Gly Val Phe Leu His Val Leu Ala Asp Thr Leu Gly Ser	
201 206 211 216	
att ggt gtg atc gta tcc aca gtt ctt ata gag cag ttt gga tgg ttc	783
Ile Gly Val Ile Val Ser Thr Val Leu Ile Glu Gln Phe Gly Trp Phe	
217 222 227 232	
atc gct gac cca ctc tgt tct ctt ttt att gct ata tta ata ttt ctc	831
Ile Ala Asp Pro Leu Cys Ser Leu Phe Ile Ala Ile Leu Ile Phe Leu	
233 238 243 248	
agg gtt gtt cca ctg att aaa gat gcc tgc cag gtt cta ctc ctg aga	879
Arg Val Val Pro Leu Ile Lys Asp Ala Cys Gln Val Leu Leu Leu Arg	
249 254 259 264	

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 <211> 466
 <212> DNA
 <213> Homo sapiens

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 <222> (125) .. (346)

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 ttcagcgtc gggtaggag ctggtggcgt cggcaggttc gaggcgattc gagctccagc 120
 tagg atg atc gag gtt gtt tgc aac gac cgt ctg ggg aag aag gtc cgc 169
 Met Ile Glu Val Val Cys Asn Asp Arg Leu Gly Lys Lys Val Arg
 1 5 10
 gtt aaa tgc aac acg gat gat acc atc ggg gac ctt aag aag ctg att 217
 Val Lys Cys Asn Thr Asp Thr Ile Gly Asp Leu Lys Lys Leu Ile
 16 21 26 31
 gca gcc caa act ggt acc cgt tgg aac aag att gtc ctg aag aag tgg 265
 Ala Ala Gln Thr Gly Thr Arg Trp Asn Lys Ile Val Leu Lys Lys Trp
 32 37 42 47
 tac acg att ttt aag gac cac gtg tct ctg ggg gac tat gaa atc cac 313
 Tyr Thr Ile Phe Lys Asp His Val Ser Leu Gly Asp Tyr Glu Ile His
 48 53 58 63
 gat ggg atg aac ctg gag ctt tat tat caa tag atgagaat cctcatcttc 364
 Asp Gly Met Asn Leu Glu Leu Tyr Tyr Gln *
 64 69 74
 ctgccccgct ttcctctccc atcctcatcc cccacactgg gatagatgct tgtttgtaaa 424
 aactcacctt aataaagact tagatgttgc aaaaaaaaaa aa 466

<210> 728
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 <212> DNA
 <213> Homo sapiens

<220>
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 ttttaattgaa aagtaacttg ggttctcttt agaaaccctt atttggtgtg cgcattctggc 180

tatttcacag agatttcagt tttgcaaaga agtcggagtt gattttcttcc ctcagacaag	240
ctattggttg ttggtgggca acagaagttg ctcagcatag acaggggaaa aaacggttac	300
ggatgagact gaaagaaaac ctcaaaggag aactctgaga attcatctca ggatgaagct	360
gcaagggcaa aggagaagta cttgtgacac aagcaa atg ggt cca ttg atc aac	414
Met Gly Pro Leu Ile Asn	
1	
aga tgc aag aag att ctt ctc cca act act gta cct cct gca acg atg	462
Arg Cys Lys Lys Ile Leu Leu Pro Thr Thr Val Pro Pro Ala Thr Met	
7 12 17 22	
aga atc tgg ctc ctt gga ggc ctg ctg cca ttc ctg ctg ctc ctc tct	510
Arg Ile Trp Leu Leu Gly Gly Leu Leu Pro Phe Leu Leu Leu Leu Ser	
23 28 33 38	
ggc ctg cag aga ccc aca gag ggt tct gag gtt gca att aaa atc gac	558
Gly Leu Gln Arg Pro Thr Glu Gly Ser Glu Val Ala Ile Lys Ile Asp	
39 44 49 54	
ttc gac ttc gca cca ggt tct ttt gat gat cag tac caa ggc tgt agc	606
Phe Asp Phe Ala Pro Gly Ser Phe Asp Asp Gln Tyr Gln Gly Cys Ser	
55 60 65 70	
aaa cag gtt atg gag aaa cta act caa ggg gat tat ttc aca aaa gac	654
Lys Gln Val Met Glu Lys Leu Thr Gln Gly Asp Tyr Phe Thr Lys Asp	
71 76 81 86	
ata gaa gcc cag aag aat tat ttt agg atg tgg caa aaa gcc cac tta	702
Ile Glu Ala Gln Lys Asn Tyr Phe Arg Met Trp Gln Lys Ala His Leu	
87 92 97 102	
gcc tgg ctt aac caa gga aaa gtt cta ccc cag aac atg act acc aca	750
Ala Trp Leu Asn Gln Gly Lys Val Leu Pro Gln Asn Met Thr Thr Thr	
103 108 113 118	
cac gct gtg gct att ttg ttt tat aca ttg aac agc aat gtt cat tct	798
His Ala Val Ala Ile Leu Phe Tyr Thr Leu Asn Ser Asn Val His Ser	
119 124 129 134	
gac ttt act aga gcc atg gcc tct gtt gcc agg act cca cag cag tat	846
Asp Phe Thr Arg Ala Met Ala Ser Val Ala Arg Thr Pro Gln Gln Tyr	
135 140 145 150	
gaa cgt tca ttc cac ttc aaa tat tta cac tac tac ctc acc tca gca	894
Glu Arg Ser Phe His Phe Lys Tyr Leu His Tyr Tyr Leu Thr Ser Ala	
151 156 161 166	
atc cag ctg ctg agg aaa gac agc atc atg gag aat ggc act ctg tgc	942
Ile Gln Leu Leu Arg Lys Asp Ser Ile Met Glu Asn Gly Thr Leu Cys	
167 172 177 182	
tat gag gtg cat tat agg acg aag gat gtc cac ttt aat gcc tac aca	990
Tyr Glu Val His Tyr Arg Thr Lys Asp Val His Phe Asn Ala Tyr Thr	
183 188 193 198	

tctggcccttt ccttctttttt cttttcccccgcagcacaggt gtggctgttt gtctccttgc	120
ccgccaaaagt tctgcacgag cggagtcctta ttgtgtcgtt atttggacaa gaggcacatt	180
gacccaattt ggagacgtat tttcgaagga ggtgtgaaaa agacagc atg aac ttt	236
	Met Asn Phe
	1
acc cca aca cac acc cct gtc tgc aga agg cga aca gtt gtc tcc aaa	284
Thr Pro Thr His Thr Pro Val Cys Arg Arg Arg Thr Val Val Ser Lys	
4 9 14 19	
cgt ggt gtt gcc gtc agt ggt ccc acc aag agg agg gga atg gca gat	332
Arg Gly Val Ala Val Ser Gly Pro Thr Lys Arg Arg Gly Met Ala Asp	
20 25 30 35	
tca ctg gag tca acc ccc ttg cct tcc ccc gaa gat cgt ctg gcc aaa	380
Ser Leu Glu Ser Thr Pro Leu Pro Ser Pro Glu Asp Arg Leu Ala Lys	
36 41 46 51	
ctc cat cct tct aag gag ctc ctg gaa tat tat caa aag aag atg gct	428
Leu His Pro Ser Lys Glu Leu Leu Glu Tyr Tyr Gln Lys Lys Met Ala	
52 57 62 67	
gag tgt gag gca gaa aat gag gac ttg ctg aag aaa ctg gaa ctc tac	476
Glu Cys Glu Ala Glu Asn Glu Asp Leu Leu Lys Lys Leu Glu Leu Tyr	
68 73 78 83	
aaa gaa gct tgt gaa gga cag cat aaa ctt gaa tgt gat ttg cag cag	524
Lys Glu Ala Cys Glu Gly Gln His Lys Leu Glu Cys Asp Leu Gln Gln	
84 89 94 99	
agg gag gaa gag att gct gaa ttg cag aaa gct cta agt gat atg cag	572
Arg Glu Glu Glu Ile Ala Glu Leu Gln Lys Ala Leu Ser Asp Met Gln	
100 105 110 115	
gtc tgc ctc ttc cag gaa cgg gaa cat gtt tta cgc ctc tac tca gaa	620
Val Cys Leu Phe Gln Glu Arg Glu His Val Leu Arg Leu Tyr Ser Glu	
116 121 126 131	
aat gac cga ctg aga atc agg gag cta gaa gac aag aaa aag att cag	668
Asn Asp Arg Leu Arg Ile Arg Glu Leu Glu Asp Lys Lys Lys Ile Gln	
132 137 142 147	
aat ctc ttg gct ctt gtg gga aca gat gct gga gaa gtg acc tat ttt	716
Asn Leu Leu Ala Leu Val Gly Thr Asp Ala Gly Glu Val Thr Tyr Phe	
148 153 158 163	
tgt aag gag cct cct cac aaa gtc acc att ctc caa aag act atc cag	764
Cys Lys Glu Pro Pro His Lys Val Thr Ile Leu Gln Lys Thr Ile Gln	
164 169 174 179	
gct gta ggt gaa tgt gag cag agt gaa tct tca gct ttc aaa gca gat	812
Ala Val Gly Glu Cys Glu Gln Ser Glu Ser Ser Ala Phe Lys Ala Asp	
180 185 190 195	
cct aaa ata agc aaa aga aga cca tcg aga gag aga aaa gaa agt tct	860

Pro Lys Ile Ser Lys Arg Arg Pro Ser Arg Glu Arg Lys Glu Ser Ser	
196 201 206 211	
gag cat tac caa aga gac ata cag aca ctc atc cta cag gtg gaa gca	908
Glu His Tyr Gln Arg Asp Ile Gln Thr Leu Ile Leu Gln Val Glu Ala	
212 217 222 227	
ctg cag gct cag ctg gga gag cag acc aaa ctt tct cga gaa caa att	956
Leu Gln Ala Gln Leu Gly Glu Gln Thr Lys Leu Ser Arg Glu Gln Ile	
228 233 238 243	
gaa ggg ctc atc gag gac aga cgg att cac ctt gag gaa ata caa gtt	1004
Glu Gly Leu Ile Glu Asp Arg Arg Ile His Leu Glu Glu Ile Gln Val	
244 249 254 259	
cag cac cag aga aat cag aac aaa atc aaa gag cta acc aaa aat ctt	1052
Gln His Gln Arg Asn Gln Asn Lys Ile Lys Glu Leu Thr Lys Asn Leu	
260 265 270 275	
cac cac acc caa gaa ctg ctc tat gag agc acc aaa gat ttt ctg caa	1100
His His Thr Gln Glu Leu Leu Tyr Glu Ser Thr Lys Asp Phe Leu Gln	
276 281 286 291	
ctc aga tct gaa aac caa aat aaa gag aag tca tgg atg ctt gaa aaa	1148
Leu Arg Ser Glu Asn Gln Asn Lys Glu Lys Ser Trp Met Leu Glu Lys	
292 297 302 307	
gat aat ttg atg tca aag att aag caa tat agg gtg cag tgt aag aag	1196
Asp Asn Leu Met Ser Lys Ile Lys Gln Tyr Arg Val Gln Cys Lys Lys	
308 313 318 323	
aaa gaa gat aaa att gga aaa gtg ttg ccc gtt atg cat gag agt cac	1244
Lys Glu Asp Lys Ile Gly Lys Val Leu Pro Val Met His Glu Ser His	
324 329 334 339	
cat gct caa agt gaa tat att aag gta atg tcc tta tgt cgt aac gaa	1292
His Ala Gln Ser Glu Tyr Ile Lys Val Met Ser Leu Cys Arg Asn Glu	
340 345 350 355	
gtt gtt tat ttt tct ggg aga gtt gaa gga att cca aag aac cta caa	1340
Val Val Tyr Phe Ser Gly Arg Val Glu Gly Ile Pro Lys Asn Leu Gln	
356 361 366 371	
ttt gta atg taa gat ccattcagtc caggaagctc tggtagcagc tgcctcaaga	1395
Phe Val Met *	
372	
actaggtttc aaagagcagc tgatcggttg agtatttggg gattcaa	1442

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 <213> Homo sapiens

<220>
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 <222> (147)..(1511)

<400> 730

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cggtcgcgagc gtgcctagta gctgtgaacc cggcgcgagg tcccggggccc cggggcgctc	120
gctcaggtaa atttttccat aacctt atg gag aga aag gac ttt gag aca tgg	173
Met Glu Arg Lys Asp Phe Glu Thr Trp	
1 5	
ctt gat aac att tct gtt aca ttt ctt tct ctg acg gac ttg cag aaa	221
Leu Asp Asn Ile Ser Val Thr Phe Leu Ser Leu Thr Asp Leu Gln Lys	
10 15 20 25	
aat gaa act ctg gat cac ctg att agt ctg agt ggg gca gtc cag ctc	269
Asn Glu Thr Leu Asp His Leu Ile Ser Leu Ser Gly Ala Val Gln Leu	
26 31 36 41	
agg cat ctc tcc aat aac cta gag act ctc ctc aag cgg gac ttc ctc	317
Arg His Leu Ser Asn Asn Leu Glu Thr Leu Leu Lys Arg Asp Phe Leu	
42 47 52 57	
aaa ctc ctt ccc ctg gag ctc agt ttt tat ttg tta aaa tgg ctc gat	365
Lys Leu Leu Pro Leu Glu Leu Ser Phe Tyr Leu Leu Lys Trp Leu Asp	
58 63 68 73	
cct cag act tta ctc aca tgc tgc ctc gtc tct aaa cag tgg aat aag	413
Pro Gln Thr Leu Leu Thr Cys Cys Leu Val Ser Lys Gln Trp Asn Lys	
74 79 84 89	
gtg ata agt gcc tgt aca gag gtg tgg cag act gca tgt aaa aat ttg	461
Val Ile Ser Ala Cys Thr Glu Val Trp Gln Thr Ala Cys Lys Asn Leu	
90 95 100 105	
ggc tgg cag ata gat gat tct gtt cag gac gct ttg cac tgg aag aag	509
Gly Trp Gln Ile Asp Asp Ser Val Gln Asp Ala Leu His Trp Lys Lys	
106 111 116 121	
gtt tat ttg aag gct att ttg aga atg aag caa ctg gag gac cat gaa	557
Val Tyr Leu Lys Ala Ile Leu Arg Met Lys Gln Leu Glu Asp His Glu	
122 127 132 137	
gcc ttt gaa acc tcg tca tta att gga cac agt gcc aga gtg tat gca	605
Ala Phe Glu Thr Ser Ser Leu Ile Gly His Ser Ala Arg Val Tyr Ala	
138 143 148 153	
ctt tac tac aaa gat gga ctt ctc tgt aca ggg tca gat gac ttg tct	653
Leu Tyr Tyr Lys Asp Gly Leu Leu Cys Thr Gly Ser Asp Asp Leu Ser	
154 159 164 169	
gca aag ctg tgg gat gtg agc aca ggg cag tgc gtt tat ggc atc cag	701
Ala Lys Leu Trp Asp Val Ser Thr Gly Gln Cys Val Tyr Gly Ile Gln	
170 175 180 185	

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 <212> DNA
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 <220>
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 <222> (62)..(925)

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 t atg gag ttt gca gcc ata tgt ctc aga aat gcc ttg ttg ctg cta 106
 Met Glu Phe Ala Ala Ile Cys Leu Arg Asn Ala Leu Leu Leu Leu
 1 5 10

 cct gaa gaa cag caa gat cca aag cag gaa aat ggg gct caa aat agt 154
 Pro Glu Glu Gln Gln Asp Pro Lys Gln Glu Asn Gly Ala Gln Asn Ser
 16 21 26 31

 aat caa tta ggt ggg aac aca gag agc agc gaa agc agt gaa act tgc 202
 Asn Gln Leu Gly Gly Asn Thr Glu Ser Ser Glu Ser Ser Glu Thr Cys
 32 37 42 47

 agc agt aaa agc cat gat gga gat aaa ttc att cca gct cca cct tct 250
 Ser Ser Lys Ser His Asp Gly Asp Lys Phe Ile Pro Ala Pro Pro Ser
 48 53 58 63

 tct cca ttg aga aaa cag gaa tta gaa aac tta aag tgc tcc ata ctt 298
 Ser Pro Leu Arg Lys Gln Glu Leu Glu Asn Leu Lys Cys Ser Ile Leu
 64 69 74 79

 gct tgc agt gcc tac gtg gct ctg gct ttg ggt gat aac ctc atg gct 346
 Ala Cys Ser Ala Tyr Val Ala Leu Ala Leu Gly Asp Asn Leu Met Ala
 80 85 90 95

 ttg aat cat gca gat aaa ctt ctt cag cag ccc aag ctg tca gga tct 394
 Leu Asn His Ala Asp Lys Leu Leu Gln Gln Pro Lys Leu Ser Gly Ser
 96 101 106 111

 ctt aag ttt ttg gga cat tta tat gct gca gaa gcc ctc atc tct ctc 442
 Leu Lys Phe Leu Gly His Leu Tyr Ala Ala Glu Ala Leu Ile Ser Leu
 112 117 122 127

 gac aga ata tct gat gcc att act cac ttg aac ccg gag aat gtc act 490
 Asp Arg Ile Ser Asp Ala Ile Thr His Leu Asn Pro Glu Asn Val Thr
 128 133 138 143

 gat gtc tcc tta ggg atc tct tca aat gag cag gac caa gga tca gac 538
 Asp Val Ser Leu Gly Ile Ser Ser Asn Glu Gln Asp Gln Gly Ser Asp
 144 149 154 159

 aaa ggt gaa aat gaa gca atg gaa tcc tct ggt aag cgg gcc cct cag 586
 Lys Gly Glu Asn Glu Ala Met Glu Ser Ser Gly Lys Arg Ala Pro Gln

160	165	170	175	
tgc tac ccc agt tcc gtc aac tct gcc agg act gtg atg ctg ttc aac				634
Cys Tyr Pro Ser Ser Val Asn Ser Ala Arg Thr Val Met Leu Phe Asn				
176	181	186	191	
ctt ggc agc gct tac tgc ctg agg agc gaa tat gac aaa gcc cga aag				682
Leu Gly Ser Ala Tyr Cys Leu Arg Ser Glu Tyr Asp Lys Ala Arg Lys				
192	197	202	207	
tgt ctc cac cag gcg gct tca atg atc cat cct aaa gag gtg ccc cct				730
Cys Leu His Gln Ala Ala Ser Met Ile His Pro Lys Glu Val Pro Pro				
208	213	218	223	
gag gcc atc ttg ctg gca gtc tac ctt gaa ctg cag aat ggt aat act				778
Glu Ala Ile Leu Leu Ala Val Tyr Leu Glu Leu Gln Asn Gly Asn Thr				
224	229	234	239	
cag ctg gcc tta cag atc atc aaa agg aat cag ctg ctc cct gca gtg				826
Gln Leu Ala Leu Gln Ile Ile Lys Arg Asn Gln Leu Leu Pro Ala Val				
240	245	250	255	
aaa aca cac tct gaa gtg aga aag aag cca gtg ttt cag cct gtc cac				874
Lys Thr His Ser Glu Val Arg Lys Lys Pro Val Phe Gln Pro Val His				
256	261	266	271	
ccg atc cag ccc atc caa atg ccg gct ttc acc act gtg cag aga aag				922
Pro Ile Gln Pro Ile Gln Met Pro Ala Phe Thr Thr Val Gln Arg Lys				
272	277	282	287	
tga tact tcacttttgg aaaactgtta cctgagaccc aggggagaat ttactggcca				979
*				
288				
ttttagttgt atcacagcag aatgaataaa agatggtgaa ggctgttaaa aaaaaaaaaa				1038

<210> 733
 <211> 2318
 <212> DNA
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<220>
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 <222> (663) .. (1691)

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gcgggggaatt cataccagcg tgctccaggg caatctgcag aaccaaagt attctcataa	60
tgtgggtcatc atgaacctca acaacctgaa cctgaccag gtgcagcaga ggaacctcat	120
cacgaatctg cagcgggtctg tggatgacac aagccaggct atccagcgaa tcaagaacga	180
ctttcaaaat ctgcagcagg tttttcttca agccaagaag gacacggatt ggctgaagga	240

gaaagtgcag agcttgcaga cactggctgc caacaactct gcgttggcca aagccaacaa 300
cgacaccctg gaggatatga acagccagct caactcattc acaggtcaga tggagaacat 360
caccactatc tctcaaggcc aacgagcaga acctgaaaga cctgcaggac ttacacaaag 420
atgcagagaa tagaacagcc atcaagttca accaactgga ggaacgcttc cagctctttg 480
agacggatat tgtgaacatc attagcaata tcagttacac agcccaccac ctgcggacgc 540
tgaccagcaa tctaaatgaa gtcaggacca ctgacacaga tacccttacc aaacacacag 600
atgatctgac ctcccttgaat aataccctgg ccaacatccg tttggattct gtttctctca 660
gg atg caa caa gat ttg atg agg tcg agg tta gac act gaa gta gcc 707
Met Gln Gln Asp Leu Met Arg Ser Arg Leu Asp Thr Glu Val Ala
1 5 10
aac tta tca gtg att atg gaa gaa atg aag cta gta gac tcc aag cat 755
Asn Leu Ser Val Ile Met Glu Glu Met Lys Leu Val Asp Ser Lys His
16 21 26 31
ggc cag ctc atc aag aat ttt aca ata cta caa ggt cca ccg ggc ccc 803
Gly Gln Leu Ile Lys Asn Phe Thr Ile Leu Gln Gly Pro Pro Gly Pro
32 37 42 47
agg ggt cca aga ggt gac aga gga tcc cag gga ccc cct ggc cca act 851
Arg Gly Pro Arg Gly Asp Arg Gly Ser Gln Gly Pro Pro Gly Pro Thr
48 53 58 63
ggc aac aag gga cag aaa gga gag aag ggg gag cct gga cca cct ggc 899
Gly Asn Lys Gly Gln Lys Gly Glu Lys Gly Glu Pro Gly Pro Pro Gly
64 69 74 79
cct gcg ggt gag aga ggc cca att gga cca gct ggt ccc ccc gga gag 947
Pro Ala Gly Glu Arg Gly Pro Ile Gly Pro Ala Gly Pro Pro Gly Glu
80 85 90 95
cgt ggc ggc aaa gga tct aaa ggc tcc cag ggc ccc aaa ggc tcc cgt 995
Arg Gly Gly Lys Gly Ser Lys Gly Ser Gln Gly Pro Lys Gly Ser Arg
96 101 106 111
ggc tcc cct ggg aag ccc ggc cct cag ggc ccc agt ggg gac cca ggc 1043
Gly Ser Pro Gly Lys Pro Gly Pro Gln Gly Pro Ser Gly Asp Pro Gly
112 117 122 127
ccc ccg ggc cca cca ggc aaa gag gga ctc ccc ggc cct cag ggc cct 1091
Pro Pro Gly Pro Pro Gly Lys Glu Gly Leu Pro Gly Pro Gln Gly Pro
128 133 138 143
cct ggc ttc cag gga ctt cag ggc acc gtt ggg gag cct ggg gtg cct 1139
Pro Gly Phe Gln Gly Leu Gln Gly Thr Val Gly Glu Pro Gly Val Pro
144 149 154 159
gga cct cgg gga ctg cca ggc ttg cct ggg gta cca ggc atg cca ggc 1187
Gly Pro Arg Gly Leu Pro Gly Leu Pro Gly Val Pro Gly Met Pro Gly
160 165 170 175

ccc aag ggc ccc ccc ggc cct cct ggc cca tca gga gcg gtg gtg ccc	1235
Pro Lys Gly Pro Pro Gly Pro Pro Gly Pro Ser Gly Ala Val Val Pro	
176 181 186 191	
ctg gcc ctg cag aat gag cca acc ccg gca ccg gag gac aat ggc tgc	1283
Leu Ala Leu Gln Asn Glu Pro Thr Pro Ala Pro Glu Asp Asn Gly Cys	
192 197 202 207	
ccg cct cac tgg aag aac ttc aca gac aaa tgc tac tat ttt tca gtt	1331
Pro Pro His Trp Lys Asn Phe Thr Asp Lys Cys Tyr Tyr Phe Ser Val	
208 213 218 223	
gag aaa gaa att ttt gag gat gca aag ctt ttc tgc gaa gac aag tct	1379
Glu Lys Glu Ile Phe Glu Asp Ala Lys Leu Phe Cys Glu Asp Lys Ser	
224 229 234 239	
tca cat ctt gtt ttc ata aac act aga gag gaa cag caa tgg ata aaa	1427
Ser His Leu Val Phe Ile Asn Thr Arg Glu Glu Gln Gln Trp Ile Lys	
240 245 250 255	
aaa cag atg gta ggg aga gag agc cac tgg atc ggc ctc aca gac tca	1475
Lys Gln Met Val Gly Arg Glu Ser His Trp Ile Gly Leu Thr Asp Ser	
256 261 266 271	
gag cgt gaa aac gaa tgg aag tgg ctg gat ggg aca tct cca gac tac	1523
Glu Arg Glu Asn Glu Trp Lys Trp Leu Asp Gly Thr Ser Pro Asp Tyr	
272 277 282 287	
aaa aat tgg aaa gct gga cag ccg gat aac tgg ggt cat ggc cat ggg	1571
Lys Asn Trp Lys Ala Gly Gln Pro Asp Asn Trp Gly His Gly His Gly	
288 293 298 303	
cca gga gaa gac tgt gct ggg ttg att tat gct ggg cag tgg aac gat	1619
Pro Gly Glu Asp Cys Ala Gly Leu Ile Tyr Ala Gly Gln Trp Asn Asp	
304 309 314 319	
ttc caa tgt gaa gac gtc aat aac ttc att tgc gaa aaa gac agg gag	1667
Phe Gln Cys Glu Asp Val Asn Asn Phe Ile Cys Glu Lys Asp Arg Glu	
320 325 330 335	
aca gta ctg tca tct gca tta taa cggactgtga tgggatcaca tgagcaaatt	1721
Thr Val Leu Ser Ser Ala Leu *	
336 341	
ttcagctctc aaaggcaaag gacactcctt tctaattgca tcaccttctc atcagattga	1781
aaaaaaaaa gcaactgaaaa ccaattactg aaaaaaaatt gacagctagt gttttttacc	1841
atccgctcatt acccaaagac ttgggaacta aaatgttccc cagggtgata tgctgatttt	1901
cattgtgcac atggactgaa tcacatagat tctcctccgt cagtaaccgt gcgattatac	1961
aaattatgtc ttccaaaagta tggaacactc caatcagaaa aaggttatca ttggctcgttg	2021
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aagtgttagga aaaatatgca gacatacaga tatataggcc aactattagt aataatatga 2141
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caataatggt actaataaaa actcctaggg tttcctgtca gatttaaaaa aaaaaaa 2318

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Phe Ser Ser Ser Gln Glu Leu Gly Ala Ala Leu Ala Gln Leu Val Ala
12 17 22 27
cag cgc gca gca tgc tgc ctg gca ggg gcc cgc gcc cgt ttc gcg ctc 146
Gln Arg Ala Ala Cys Cys Leu Ala Gly Ala Arg Ala Arg Phe Ala Leu
28 33 38 43
ggc ttg tcg ggc ggg agc ctc gtc tcg atg cta gcc cgc gag cta ccc 194
Gly Leu Ser Gly Gly Ser Leu Val Ser Met Leu Ala Arg Glu Leu Pro
44 49 54 59
gcc gcc gtc gcc cct gcc ggg cca gct agc tta gcg cgc tgg acg ctg 242
Ala Ala Val Ala Pro Ala Gly Pro Ala Ser Leu Ala Arg Trp Thr Leu
60 65 70 75
ggc ttc tgc gac gag cgc ctc gtg ccc ttc gat cac gcc gag agc acg 290
Gly Phe Cys Asp Glu Arg Leu Val Pro Phe Asp His Ala Glu Ser Thr
76 81 86 91
tac ggc ctc tac cgg acg cat ctt ctc tcc aga ctg ccg atc cca gaa 338
Tyr Gly Leu Tyr Arg Thr His Leu Leu Ser Arg Leu Pro Ile Pro Glu
92 97 102 107
agc cag gtg atc acc att aac ccc gag ctg cct gtg gag gag gcg gct 386
Ser Gln Val Ile Thr Ile Asn Pro Glu Leu Pro Val Glu Glu Ala Ala
108 113 118 123
gag gac tac gcc aag aag ctg aga cag gca ttc caa ggg gac tcc atc 434
Glu Asp Tyr Ala Lys Lys Leu Arg Gln Ala Phe Gln Gly Asp Ser Ile
124 129 134 139

ccg gtt ttc gac ctg ctg atc ctg ggg gtg ggc ccc gat ggt cac acc	482
Pro Val Phe Asp Leu Leu Ile Leu Gly Val Gly Pro Asp Gly His Thr	
140 145 150 155	
tgc tca ctc ttc cca gac cac ccc ctc cta cag gag cgg gag aag att	530
Cys Ser Leu Phe Pro Asp His Pro Leu Leu Gln Glu Arg Glu Lys Ile	
156 161 166 171	
gtg gct ccc atc agt gac tcc ccg aag cca ccg cca cag cgt gtg acc	578
Val Ala Pro Ile Ser Asp Ser Pro Lys Pro Pro Pro Gln Arg Val Thr	
172 177 182 187	
ctc aca cta cct gtc ctg aat gca gca cga act gtc atc ttt gtg gca	626
Leu Thr Leu Pro Val Leu Asn Ala Ala Arg Thr Val Ile Phe Val Ala	
188 193 198 203	
act gga gaa ggc aag gca gct gtt ctg aag cgc att ttg gag gac cag	674
Thr Gly Glu Gly Lys Ala Ala Val Leu Lys Arg Ile Leu Glu Asp Gln	
204 209 214 219	
gag gaa aac ccg ctg ccc gcc gcc ctg gtc cag ccc cac acc ggg aaa	722
Glu Glu Asn Pro Leu Pro Ala Ala Leu Val Gln Pro His Thr Gly Lys	
220 225 230 235	
ctg tgc tgg ttc ttg gac gag gcg gcc gcc cgc ctc ctg acc gtg ccc	770
Leu Cys Trp Phe Leu Asp Glu Ala Ala Ala Arg Leu Leu Thr Val Pro	
236 241 246 251	
ttc gag aag cat tcc act ttg tag ctggccagag ggacgccgca gctgggacca	824
Phe Glu Lys His Ser Thr Leu *	
252 257	
ggcacgcggc ccatggggct gggcccctgc tggccgccac tctccgggct ctcctttcaa	884
aaagccacgt cgtgctgctg ctggaagcca acagcctccg gccagcagcc ctacccgggg	944
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Met Ala Ala Ser Met Phe Tyr Gly Arg Leu Val Ala	

	1	5	10	
gtg gcc acc ctt cgg aac cac cgg cct cgg acg gcc cag cgg gct gct				157
Val Ala Thr Leu Arg Asn His Arg Pro Arg Thr Ala Gln Arg Ala Ala				
13 18 23 28				
gct cag gtt ctg gga agt tct gga ttg ttt aat aac cat gga ctc caa				205
Ala Gln Val Leu Gly Ser Ser Gly Leu Phe Asn Asn His Gly Leu Gln				
29 34 39 44				
gta cag cag caa cag caa agg aat ctc tca cta cat gaa tac atg agt				253
Val Gln Gln Gln Gln Gln Arg Asn Leu Ser Leu His Glu Tyr Met Ser				
45 50 55 60				
atg gaa tta ttg caa gaa gct ggt gtc tcc gtt ccc aaa gga tat gtg				301
Met Glu Leu Leu Gln Glu Ala Gly Val Ser Val Pro Lys Gly Tyr Val				
61 66 71 76				
gca aag tca cca gat gaa gct tat gca att gcc aaa aaa tta ggt tca				349
Ala Lys Ser Pro Asp Glu Ala Tyr Ala Ile Ala Lys Lys Leu Gly Ser				
77 82 87 92				
aaa gat gtc gtg ata aag gca cag gtt tta gct ggt ggt aga gga aaa				397
Lys Asp Val Val Ile Lys Ala Gln Val Leu Ala Gly Gly Arg Gly Lys				
93 98 103 108				
gga aca ttt gaa agt ggc ctc aaa gga gga gtg aag ata gtt ttc tct				445
Gly Thr Phe Glu Ser Gly Leu Lys Gly Gly Val Lys Ile Val Phe Ser				
109 114 119 124				
cca gaa gaa gca aaa gct gtt tct tca caa atg att ggg aaa aaa ttg				493
Pro Glu Glu Ala Lys Ala Val Ser Ser Gln Met Ile Gly Lys Lys Leu				
125 130 135 140				
ttt acc aag caa acg gga gaa aag ggc aga ata tgc aat caa gta ttg				541
Phe Thr Lys Gln Thr Gly Glu Lys Gly Arg Ile Cys Asn Gln Val Leu				
141 146 151 156				
gtc tgt gag cga aaa tat ccc agg aga gaa tac tac ttt gca ata aca				589
Val Cys Glu Arg Lys Tyr Pro Arg Arg Glu Tyr Tyr Phe Ala Ile Thr				
157 162 167 172				
atg gaa agg tca ttt caa ggt cct gta tta ata gga agt tca cat ggt				637
Met Glu Arg Ser Phe Gln Gly Pro Val Leu Ile Gly Ser Ser His Gly				
173 178 183 188				
ggt gtc aac att gaa gat gtt gct gct gag act cct gaa gca ata att				685
Gly Val Asn Ile Glu Asp Val Ala Ala Glu Thr Pro Glu Ala Ile Ile				
189 194 199 204				
aaa gaa cct att gat att gaa gaa ggc atc aaa aag gaa caa gct ctc				733
Lys Glu Pro Ile Asp Ile Glu Glu Gly Ile Lys Lys Glu Gln Ala Leu				
205 210 215 220				
cag ctt gca cag aag atg gga ttt cca cct aat att gtg gaa tca gca				781
Gln Leu Ala Gln Lys Met Gly Phe Pro Pro Asn Ile Val Glu Ser Ala				
221 226 231 236				

gca gaa aac atg gtc aag ctt tac agc ctt ttt ctg aaa tac gat gca	829
Ala Glu Asn Met Val Lys Leu Tyr Ser Leu Phe Leu Lys Tyr Asp Ala	
237 242 247 252	
acc atg ata gaa ata aat cca atg gtg gaa gat tca gat gga gct gta	877
Thr Met Ile Glu Ile Asn Pro Met Val Glu Asp Ser Asp Gly Ala Val	
253 258 263 268	
ttg tgt atg gat gca aag atc aat ttt gac tct aat tca gcc tat cgc	925
Leu Cys Met Asp Ala Lys Ile Asn Phe Asp Ser Asn Ser Ala Tyr Arg	
269 274 279 284	
caa aag aaa atc ttt gat cta cag gac tgg acc cag gaa gat gaa agg	973
Gln Lys Lys Ile Phe Asp Leu Gln Asp Trp Thr Gln Glu Asp Glu Arg	
285 290 295 300	
gac aaa gat gct gct aag gca aat ctc aac tac att ggc ctc gat gga	1021
Asp Lys Asp Ala Ala Lys Ala Asn Leu Asn Tyr Ile Gly Leu Asp Gly	
301 306 311 316	
aat ata ggc tgc cta gta aat ggt gct ggt ttg gct atg gcc aca atg	1069
Asn Ile Gly Cys Leu Val Asn Gly Ala Gly Leu Ala Met Ala Thr Met	
317 322 327 332	
gat ata ata aaa ctt cat gga ggg act cca gcc aac ttc ctt gat gtt	1117
Asp Ile Ile Lys Leu His Gly Gly Thr Pro Ala Asn Phe Leu Asp Val	
333 338 343 348	
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349 354 359 364	
act tca gat aaa aag gta ctg gct att ctg gtc aac att ttt gga gga	1213
Thr Ser Asp Lys Lys Val Leu Ala Ile Leu Val Asn Ile Phe Gly Gly	
365 370 375 380	
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Ile Met Arg Cys Asp Val Ile Ala Gln Gly Ile Val Met Ala Val Lys	
381 386 391 396	
gac ttg gaa att aaa ata cct gtt gtg gta cgg tta caa ggt aca cga	1309
Asp Leu Glu Ile Lys Ile Pro Val Val Val Arg Leu Gln Gly Thr Arg	
397 402 407 412	
gtc gat gat gct aag gca ctg ata gcg gac agt gga ctt aaa ata ctt	1357
Val Asp Asp Ala Lys Ala Leu Ile Ala Asp Ser Gly Leu Lys Ile Leu	
413 418 423 428	
gct tgt gat gac ttg gat gaa gct gct aga atg gtt gta aag ctc tct	1405
Ala Cys Asp Asp Leu Asp Glu Ala Ala Arg Met Val Val Lys Leu Ser	
429 434 439 444	
gaa ata gtg acc tta gcg aag caa gca cat gtg gat gtg aaa ttt cag	1453
Glu Ile Val Thr Leu Ala Lys Gln Ala His Val Asp Val Lys Phe Gln	
445 450 455 460	

ttg cca ata tga tct gaaaacccag tggatggctg aaggtgttaa atgtgctata 1508
 Leu Pro Ile *
 461

atcattaaga atactgtgtt ctgtgttatt gttctttttc ttttttagtgt gtggagattg 1568
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 attaaaacaa tgttttatgt aaaaagtgtt tatcttcagc accaaatata tgataaatgt 1928
 atcaatcact atttataaac agagctttca aacactcctc agaataattct tctaagtatt 1988
 ttgatgaagt aactttgtaa ttatttgaac attgttttaa tcattaggaa aactgatta 2048
 actgcaagtc ttcatgattc tgtcatatta agaaacacct gtagggttgc ttcaaataaa 2108
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 <222> (147)..(842)

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 acgatgacca tgaggacaat gacaag atg aac gac tct gaa ggc atg gac cct 173
 Met Asn Asp Ser Glu Gly Met Asp Pro
 1 5
 gag cgt ctt aag gcc ttc aac atg ttt gtg cgt ctc ttt gtg gac gag 221
 Glu Arg Leu Lys Ala Phe Asn Met Phe Val Arg Leu Phe Val Asp Glu
 10 15 20 25

aac ctg gac cgc atg gtg ccc atc tcc aag cag ccc aag gag aag atc	269
Asn Leu Asp Arg Met Val Pro Ile Ser Lys Gln Pro Lys Glu Lys Ile	
26 31 36 41	
cag gcc atc atc gag tcc tgc agc cgg cag ttc cct gag ttc cag gag	317
Gln Ala Ile Ile Glu Ser Cys Ser Arg Gln Phe Pro Glu Phe Gln Glu	
42 47 52 57	
cgg gcc cgc aag cgc atc cgc acg tac ctc aag tcc tgc cgt cgc atg	365
Arg Ala Arg Lys Arg Ile Arg Thr Tyr Leu Lys Ser Cys Arg Arg Met	
58 63 68 73	
aag aag aac ggc atg gag atg acc aga ccc acg cca ccc cat ctg acc	413
Lys Lys Asn Gly Met Glu Met Thr Arg Pro Thr Pro Pro His Leu Thr	
74 79 84 89	
tcg gcc atg gca gaa aac atc ctg gca gct gcc tgt gag agc gag aca	461
Ser Ala Met Ala Glu Asn Ile Leu Ala Ala Cys Glu Ser Glu Thr	
90 95 100 105	
aga aag gca gcc aag cgg atg cgt cta gag atc tac cag tcc tca cag	509
Arg Lys Ala Ala Lys Arg Met Arg Leu Glu Ile Tyr Gln Ser Ser Gln	
106 111 116 121	
gat gag ccc ata gcc ctg gac aag cag cac tcg cgg gac tcc gca gcc	557
Asp Glu Pro Ile Ala Leu Asp Lys Gln His Ser Arg Asp Ser Ala Ala	
122 127 132 137	
atc acc cac tcc acc tac tca ctg cca gcc tcc tcc tac tcc cag gac	605
Ile Thr His Ser Thr Tyr Ser Leu Pro Ala Ser Ser Tyr Ser Gln Asp	
138 143 148 153	
cct gtg tac gcc aac ggc ggc ctc aac tac agt tac cgc ggg tac ggg	653
Pro Val Tyr Ala Asn Gly Gly Leu Asn Tyr Ser Tyr Arg Gly Tyr Gly	
154 159 164 169	
gcc ttg agc agc aac ctg cag ccc cct gcc tcc ctc caa aca gga aac	701
Ala Leu Ser Ser Asn Leu Gln Pro Pro Ala Ser Leu Gln Thr Gly Asn	
170 175 180 185	
cac agt aat ggt gag tcg ggg gag gcc cgg gct ctg gct tcc cga cca	749
His Ser Asn Gly Glu Ser Gly Glu Ala Arg Ala Leu Ala Ser Arg Pro	
186 191 196 201	
gca ccc agc tgg gtc tgc aga gca gcc ctg ggc agc gga atg ggg aga	797
Ala Pro Ser Trp Val Cys Arg Ala Ala Leu Gly Ser Gly Met Gly Arg	
202 207 212 217	
ggg aag cag agg cca gtg atg gaa agg ggc tgc ctc aca gca tag gga	845
Gly Lys Gln Arg Pro Val Met Glu Arg Gly Cys Leu Thr Ala *	
218 223 228	
gcaggagggg cggnctctggc acccttccac ttcacgtct tagctgggtcc ttagattgga	905
aggatgaagga gactcagttg gttaaagcaa aaacctaccg ccccttctc accgccagtg	965

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1006

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<222> (283) .. (708)

<400> 737

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actgaacaca gatccttgag gatatggcac taatggagat ttgggggcta actccaaacc	180
cctcactcac aaagggagat ggaggtccag atagggcacc ctaagtcaca cagaaccagg	240
cctcctgcac cccgttcatt gctaatccca tagcactggg ct atg agc cct ttg	294
	Met Ser Pro Leu
	1
gga ctg gga gtc tcc atg gag tcc aac caa gcc ttc aca ggg cag ggg	342
Gly Leu Gly Val Ser Met Glu Ser Asn Gln Ala Phe Thr Gly Gln Gly	
5 10 15 20	
tgg gag tgc ctc agc ttc ctt ctg atg ggg acc ttc ctg tca gtt tcc	390
Trp Glu Cys Leu Ser Phe Leu Leu Met Gly Thr Phe Leu Ser Val Ser	
21 26 31 36	
cag aca gtc ctg gcc cag ctg gat gca ctg ctg gtc ttc cca ggc caa	438
Gln Thr Val Leu Ala Gln Leu Asp Ala Leu Leu Val Phe Pro Gly Gln	
37 42 47 52	
gtg gct caa ctc tcc tgc acg ctc agc ccc cag cac gtc acc atc agg	486
Val Ala Gln Leu Ser Cys Thr Leu Ser Pro Gln His Val Thr Ile Arg	
53 58 63 68	
gac tac ggt gtg tcc tgg tac cag cag cgg gca ggc agt gcc cct cga	534
Asp Tyr Gly Val Ser Trp Tyr Gln Gln Arg Ala Gly Ser Ala Pro Arg	
69 74 79 84	
tat ctc ctc tac tac cgc tcg gag gag gat cac cac cgg cct gct gac	582
Tyr Leu Leu Tyr Tyr Arg Ser Glu Glu Asp His His Arg Pro Ala Asp	
85 90 95 100	
atc ccc gat cga ttc tcg gca gcc aag gat gag gcc cac aat gcc tgt	630
Ile Pro Asp Arg Phe Ser Ala Ala Lys Asp Glu Ala His Asn Ala Cys	
101 106 111 116	
gtc ctc acc att agt ccc gtg cag cct gaa gac gac gcg gat tac tac	678
Val Leu Thr Ile Ser Pro Val Gln Pro Glu Asp Asp Ala Asp Tyr Tyr	

117	122	127	132	
tgc tct gtt ggc tac ggc ttt agt ccc tag g ggtgggggtgt gagatgggtg				729
Cys Ser Val Gly Tyr Gly Phe Ser Pro *				
133	138			
cctccccctct gcctcccatt tctgccctg accttgggtc ccttttaaac tttctctgag				789
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aaaaa				854

<210> 738
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 <212> DNA
 <213> Homo sapiens

<220>
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cgt atc gaa aag tgt tat ttc tgt tcg ggg ccc atc tat cct gga cac				105
Arg Ile Glu Lys Cys Tyr Phe Cys Ser Gly Pro Ile Tyr Pro Gly His				
2	7	12	17	
ggc atg atg ttc gtc cgc aac gat tgc aag gtg ttc aga ttt tgc aaa				153
Gly Met Met Phe Val Arg Asn Asp Cys Lys Val Phe Arg Phe Cys Lys				
18	23	28	33	
tct aaa tgt cat aaa aac ttt aaa aag aag cgc aat cct cgc aaa gtt				201
Ser Lys Cys His Lys Asn Phe Lys Lys Lys Arg Asn Pro Arg Lys Val				
34	39	44	49	
agg tgg acc aaa gca ttc cgg aaa gca gct ggt aaa gag ctt aca gtg				249
Arg Trp Thr Lys Ala Phe Arg Lys Ala Ala Gly Lys Glu Leu Thr Val				
50	55	60	65	
gat aat tca ttt gaa ttt gaa aaa cgt aga aat gaa cct atc aaa tac				297
Asp Asn Ser Phe Glu Phe Glu Lys Arg Arg Asn Glu Pro Ile Lys Tyr				
66	71	76	81	
cag cga gag cta tgg aat aaa act att gat gcg atg aag aga gtt gaa				345
Gln Arg Glu Leu Trp Asn Lys Thr Ile Asp Ala Met Lys Arg Val Glu				
82	87	92	97	
gaa atc aaa cag aag cgc caa gct aaa ttt ata atg aac aga ttg aag				393
Glu Ile Lys Gln Lys Arg Gln Ala Lys Phe Ile Met Asn Arg Leu Lys				
98	103	108	113	

aaa aat aaa gag cta cag aaa gtt cag gat atc aaa gaa gtc aag caa	441
Lys Asn Lys Glu Leu Gln Lys Val Gln Asp Ile Lys Glu Val Lys Gln	
114 119 124 129	
aac atc cat ctt atc cga gcc cct ctt gca ggc aaa ggg aaa cag ttg	489
Asn Ile His Leu Ile Arg Ala Pro Leu Ala Gly Lys Gly Lys Gln Leu	
130 135 140 145	
gaa gag aaa atg gta cag cag tta caa gag gat gtg gac atg gaa gat	537
Glu Glu Lys Met Val Gln Gln Leu Gln Glu Asp Val Asp Met Glu Asp	
146 151 156 161	
gct cct taa aaatctc tgtaaccatt tcttttatgt acatttgaaa atgccctttg	593
Ala Pro *	
162	
gatacttgga actgctaaat tattttatgt tttacataag gtcacttaaa tgaaaagcga	653
ttaaaagaca tctttcctgc attgccatct acataatatc agatattacg gatgttagat	713
tgcattctcag tgtaaatact ttactgatag atgtacttaa gttaaatactg aaaattctac	773
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aggcagcatt tgtatagtaa ctaatggcaa aaattcatgg ctagtgatgt ataaaaataa	893
atattctttg cagtaaaata ttccttttgt taatgttata gaagggggga taaaaaagg	953
aactaacaat ttgtatggca gtgtcagata tttttatgtt agtatttcct gttttggttt	1013
atttgcattc tagaagagca taatgacatt gtttgatgaa gcctaattat gctggactgt	1073
tttgacctgg tttaaccctt ctgataggta gttgtggatg ctggggatga gaactgaata	1133
atctttgcct ggagtgcacac tacactctag aatttccact ttggagaata ctcagttcca	1193
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aggaatccca gcgcctttta aaagttgtta tgtggttttc ttttaaaaag ctctgtttt	1313
tggaaagtag aatttatggg tacaacgtat gttcattatt tgtacataaa ataaaaccat	1373
ttaaaaagta aaaaaaaaaa aaaa	1397

<210> 739
 <211> 703
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (268) .. (456)

<400> 739

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ccctggccgg gcagcccccc aacatttctc ctgccctgaa acacggctct agccaacctg	180
ctccgctgct tcacctgcga ccgtctctgc gggggctgca cggcgccagc ccctccagcc	240
caccagggca ttgtcctcca gcccgtc	291
atg ccc agc tgt gac ccc ggt ccg	
Met Pro Ser Cys Asp Pro Gly Pro	
1 5	
ggc cct gcc tgc ctc ccc acc aag act ttc cgc agc tat ctg ccc cgc	339
Gly Pro Ala Cys Leu Pro Thr Lys Thr Phe Arg Ser Tyr Leu Pro Arg	
9 14 19 24	
tgt cac cgc act tac agc tgt gtc cac tgc cgt gca cac ctg gcc aaa	387
Cys His Arg Thr Tyr Ser Cys Val His Cys Arg Ala His Leu Ala Lys	
25 30 35 40	
cac gat gag ctt att tcc aag tcc ttc caa ggg agc cat ggc cga gcc	435
His Asp Glu Leu Ile Ser Lys Ser Phe Gln Gly Ser His Gly Arg Ala	
41 46 51 56	
tac ctg ttt aac tcc gtg tga gt ctacctctt ccttgctgct gtgcttctg	488
Tyr Leu Phe Asn Ser Val *	
57 62	
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1 5 10
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gcg gtc gtt ccc atc gtc atc agc ctg acc ctg acc acg ctg ctg ggc 494
Ala Val Val Pro Ile Val Ile Ser Leu Thr Leu Thr Thr Leu Leu Gly
46 51 56 61
aac gcc atc gcc ttt gct acg ggg gtg ctg tac gga ctc tct gct ctg 542
Asn Ala Ile Ala Phe Ala Thr Gly Val Leu Tyr Gly Leu Ser Ala Leu
62 67 72 77
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Gly Lys Lys Gly Asp Ala Ile Ser Tyr Ala Arg Ile Gln Gln Gln Arg
78 83 88 93
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Gln Gln Ala Asp Glu Glu Lys Leu Ala Glu Thr Leu Glu Gly Glu Leu
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His	Cys	Leu	Lys	Asn	Gly	Val	Thr	Asp	Leu	Ser	Met	Pro	Arg	Ile	Gly	
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Cys	Gly	Leu	Asp	Arg	Leu	Gln	Trp	Glu	Asn	Val	Ser	Ala	Met	Ile	Glu	
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Glu	Val	Phe	Glu	Ala	Thr	Asp	Ile	Lys	Ile	Thr	Val	Tyr	Thr	Leu	*	
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ccgccgccag gctagcggag ctgccccggg aagctgggtg acgggttcgc ggctgccgcc	240
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gtccactggg gaaggccgtg tgcgccggct ccgcggaag	atg ccg gac caa gcc	354
	Met Pro Asp Gln Ala	
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Leu Gln Gln Met Leu Asp Arg Ser Cys Trp Val Cys Phe Ala Thr Asp		
6 11 16 21		
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Glu Asp Asp Arg Thr Ala Glu Trp Val Arg Pro Cys Arg Cys Arg Gly		
22 27 32 37		
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Ser Thr Lys Trp Val His Gln Ala Cys Leu Gln Arg Trp Val Asp Glu		
38 43 48 53		
aag caa aga gga aac agt aca gcc aga gtg gca tgt cct cag tgc aat		546
Lys Gln Arg Gly Asn Ser Thr Ala Arg Val Ala Cys Pro Gln Cys Asn		
54 59 64 69		
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Ala Glu Tyr Leu Ile Val Phe Pro Lys Leu Gly Pro Val Val Tyr Val		
70 75 80 85		
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Leu Asp Leu Ala Asp Arg Leu Ile Ser Lys Ala Cys Pro Phe Ala Ala		
86 91 96 101		
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Ala Gly Ile Met Val Gly Ser Ile Tyr Trp Thr Ala Val Thr Tyr Gly		
102 107 112 117		
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Ala Val Thr Val Met Gln Val Val Gly His Lys Glu Gly Leu Asp Val		
118 123 128 133		
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Met Glu Arg Ala Asp Pro Leu Phe Leu Leu Ile Gly Leu Pro Thr Ile		
134 139 144 149		
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Pro Val Met Leu Ile Leu Gly Lys Met Ile Arg Trp Glu Asp Tyr Val		
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Leu Arg Leu Trp Arg Lys Tyr Ser Asn Lys Leu Gln Ile Leu Asn Ser		
166 171 176 181		
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Ile Phe Pro Gly Ile Gly Cys Pro Val Pro Arg Ile Pro Ala Glu Ala		
182 187 192 197		
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Asn Pro Leu Ala Asp His Val Ser Ala Thr Arg Ile Leu Cys Gly Ala		
198 203 208 213		

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Ser Val Asn Ser Asn Leu Gln Arg Thr Ile Leu Gly Gly Ile Ala Phe	
230 235 240 245	
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Val Ala Ile Lys Gly Ala Phe Lys Val Tyr Phe Lys Gln Gln Gln Tyr	
246 251 256 261	
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Leu Arg Gln Ala His Arg Lys Ile Leu Asn Tyr Pro ^g Glu Gln Glu Glu	
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Ala *	
278	
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gaggacc atg ctg ggc cgg agc ctc cga gaa gtt tct gcg gca ctg aaa	169
Met Leu Gly Arg Ser Leu Arg Glu Val Ser Ala Ala Leu Lys	
1 5 10	
caa ggc caa att aca cca aca gag ctc tgt caa aaa tgt ctc tct ctt	217
Gln Gly Gln Ile Thr Pro Thr Glu Leu Cys Gln Lys Cys Leu Ser Leu	
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Ile Lys Lys Thr Lys Phe Leu Asn Ala Tyr Ile Thr Val Ser Glu Glu	
31 36 41 46	
gtg gcc tta aaa caa gct gaa gaa tca gaa aag aga tat aag aat gga	313
Val Ala Leu Lys Gln Ala Glu Glu Ser Glu Lys Arg Tyr Lys Asn Gly	
47 52 57 62	
cag tca ctt ggg gat tta gat gga att cct att gca gta aaa gac aat	361
Gln Ser Leu Gly Asp Leu Asp Gly Ile Pro Ile Ala Val Lys Asp Asn	
63 68 73 78	
ttc agc act tct ggc att gag aca aca tgt gca tca aat atg ctg aaa	409
Phe Ser Thr Ser Gly Ile Glu Thr Thr Cys Ala Ser Asn Met Leu Lys	
79 84 89 94	
ggc tat ata cca cct tat aat gct aca gta gtt cag aag ttg ttg gat	457
Gly Tyr Ile Pro Pro Tyr Asn Ala Thr Val Val Gln Lys Leu Leu Asp	
95 100 105 110	
cag gga gct cta cta atg gga aaa aca aat tta aat gag ttt gct atg	505
Gln Gly Ala Leu Leu Met Gly Lys Thr Asn Leu Asn Glu Phe Ala Met	
111 116 121 126	
gga tct ggg agc aca gat ggt gta ttt gga cca gtt aaa aac ccc tgg	553
Gly Ser Gly Ser Thr Asp Gly Val Phe Gly Pro Val Lys Asn Pro Trp	
127 132 137 142	
agt tat tca aaa caa tat aga gaa aag agg aag cag aat ccc cac agc	601
Ser Tyr Ser Lys Gln Tyr Arg Glu Lys Arg Lys Gln Asn Pro His Ser	
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Glu Asn Glu Asp Ser Asp Trp Leu Ile Thr Gly Gly Ser Ser Gly Gly	
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Ser Ala Ala Ala Val Ser Ala Phe Thr Cys Tyr Ala Ala Leu Gly Ser	
175 180 185 190	
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Asp Thr Gly Gly Ser Thr Arg Asn Pro Ala Ala His Cys Gly Leu Val	
191 196 201 206	
ggc ttc aaa cca agc tat ggc tta gtt tcc cgt cat ggt ctc att ccc	793

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223					228					233					238		
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Asp	Ala	Ala	Ile	Val	Leu	Gly	Ala	Leu	Ala	Gly	Pro	Asp	Pro	Arg	Asp		
239					244					249					254		
tct	acc	aca	gta	cat	gaa	cct	att	aat	aaa	cca	ttc	atg	ctt	ccc	agt	937	
Ser	Thr	Thr	Val	His	Glu	Pro	Ile	Asn	Lys	Pro	Phe	Met	Leu	Pro	Ser		
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ttg	gca	gat	gtg	agc	aaa	cta	tgt	ata	gga	att	cca	aag	gaa	tat	ctt	985	
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271					276					281					286		
gta	ccg	gaa	tta	tca	agt	gaa	gta	cag	tct	ctt	tgg	tcc	aaa	gct	gct	1033	
Val	Pro	Glu	Leu	Ser	Ser	Glu	Val	Gln	Ser	Leu	Trp	Ser	Lys	Ala	Ala		
287					292					297					302		
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Asp	Leu	Phe	Glu	Ser	Glu	Gly	Ala	Lys	Val	Ile	Glu	Val	Ser	Leu	Pro		
303					308					313					318		
cac	acc	agt	tat	tca	att	gtc	tgc	tac	cat	gta	ttg	tgc	aca	tca	gaa	1129	
His	Thr	Ser	Tyr	Ser	Ile	Val	Cys	Tyr	His	Val	Leu	Cys	Thr	Ser	Glu		
319					324					329					334		
gtg	gca	tcg	aat	atg	gca	aga	ttt	gat	ggg	cta	caa	tat	ggg	cac	aga	1177	
Val	Ala	Ser	Asn	Met	Ala	Arg	Phe	Asp	Gly	Leu	Gln	Tyr	Gly	His	Arg		
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tgt	gac	att	gat	gtg	tcc	act	gaa	gcc	atg	tat	gct	gca	acc	aga	cga	1225	
Cys	Asp	Ile	Asp	Val	Ser	Thr	Glu	Ala	Met	Tyr	Ala	Ala	Thr	Arg	Arg		
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Glu	Gly	Phe	Asn	Asp	Val	Val	Arg	Gly	Arg	Ile	Leu	Ser	Gly	Asn	Phe		
367					372					377					382		
ttc	tta	tta	aaa	gaa	aac	tat	gaa	aat	tat	ttt	gtc	aaa	gca	cag	aaa	1321	
Phe	Leu	Leu	Lys	Glu	Asn	Tyr	Glu	Asn	Tyr	Phe	Val	Lys	Ala	Gln	Lys		
383					388					393					398		
gtg	aga	cgc	ctc	att	gct	aat	gac	ttt	gta	aat	gct	ttt	aac	tct	gga	1369	
Val	Arg	Arg	Leu	Ile	Ala	Asn	Asp	Phe	Val	Asn	Ala	Phe	Asn	Ser	Gly		
399					404					409					414		
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Val	Asp	Val	Leu	Leu	Thr	Pro	Thr	Thr	Leu	Ser	Glu	Ala	Val	Pro	Tyr		
415					420					425					430		
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Leu	Glu	Phe	Ile	Lys	Glu	Asp	Asn	Arg	Thr	Arg	Ser	Ala	Gln	Asp	Asp		

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Ile Phe Thr Gln Ala Val Asn Met Ala Gly Leu Pro Ala Val Ser Ile				
447	452	457	462	
cct gtt gca ctc tca aac caa ggg ttg cca ata gga cta cag ttt att				1561
Pro Val Ala Leu Ser Asn Gln Gly Leu Pro Ile Gly Leu Gln Phe Ile				
463	468	473	478	
gga cgt gcg ttt tgt gac cag cag ctt ctt aca gta gcc aaa tgg ttt				1609
Gly Arg Ala Phe Cys Asp Gln Gln Leu Leu Thr Val Ala Lys Trp Phe				
479	484	489	494	
gaa aaa caa gta cag ttt cct gtt att caa ctt caa gaa ctc atg gat				1657
Glu Lys Gln Val Gln Phe Pro Val Ile Gln Leu Gln Glu Leu Met Asp				
495	500	505	510	
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Asp Cys Ser Ala Val Leu Glu Asn Glu Lys Leu Ala Ser Val Ser Leu				
511	516	521	526	
aaa cag taa acatatac ttacaaatta aaatgacttt taggctgggt gcagtggctc				1761
Lys Gln *				
527				
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tgaaccctgg aggtggaggt tgcagtgagc cgagatcatg ccactgcact gcactccagc				2001
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Glu Pro Tyr Met Asp Glu Asn Phe Ile Ser Arg Ala Phe Ala Thr Met	

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Gly Glu Thr Val Met Ser Val Lys Ile Ile Arg Asn Arg Leu Thr Gly				
27	32	37	42	
atc cca gct ggc tac tgc ttt gta gaa ttt gca gat ttg gcc aca gct				196
Ile Pro Ala Gly Tyr Cys Phe Val Glu Phe Ala Asp Leu Ala Thr Ala				
43	48	53	58	
gag aag tgt ttg cat aaa att aat ggg aaa ccc ctt cca gga gcc aca				244
Glu Lys Cys Leu His Lys Ile Asn Gly Lys Pro Leu Pro Gly Ala Thr				
59	64	69	74	
cct gcg aaa cgt ttt aaa ctg aac tat gcc act tac ggg aaa caa cca				292
Pro Ala Lys Arg Phe Lys Leu Asn Tyr Ala Thr Tyr Gly Lys Gln Pro				
75	80	85	90	
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Asp Asn Ser Pro Glu Tyr Ser Leu Phe Val Gly Asp Leu Thr Pro Asp				
91	96	101	106	
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Val Asp Asp Gly Met Leu Tyr Glu Phe Phe Val Lys Val Tyr Pro Ser				
107	112	117	122	
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Cys Arg Gly Gly Lys Val Val Leu Asp Gln Thr Gly Val Ser Lys Gly				
123	128	133	138	
tat ggt ttt gtg aaa ttc aca gat gaa ctg gaa cag aag cga gcc ctg				484
Tyr Gly Phe Val Lys Phe Thr Asp Glu Leu Glu Gln Lys Arg Ala Leu				
139	144	149	154	
acg gag tgc cag gga gca gtg gga ctg ggg tct aag cct gtg cgg ctg				532
Thr Glu Cys Gln Gly Ala Val Gly Leu Gly Ser Lys Pro Val Arg Leu				
155	160	165	170	
agc gtg gca atc cct aaa gcg agc cgt gta aag cca gtg gaa tat agt				580
Ser Val Ala Ile Pro Lys Ala Ser Arg Val Lys Pro Val Glu Tyr Ser				
171	176	181	186	
cag atg tac agt tat agc tac aac cag tat tat cag cag tac cag aac				628
Gln Met Tyr Ser Tyr Ser Tyr Asn Gln Tyr Tyr Gln Gln Tyr Gln Asn				
187	192	197	202	
tac tat gct cag tgg ggc tat gac cag aac aca ggc agc tac agc tac				676
Tyr Tyr Ala Gln Trp Gly Tyr Asp Gln Asn Thr Gly Ser Tyr Ser Tyr				
203	208	213	218	
agt tac ccc cag tat ggc tat acc cag agc acc atg cag aca tat gaa				724
Ser Tyr Pro Gln Tyr Gly Tyr Thr Gln Ser Thr Met Gln Thr Tyr Glu				
219	224	229	234	
gaa gtt gga gat gat gca ttg gaa gac ccc atg cca cag ctg gat gtg				772
Glu Val Gly Asp Asp Ala Leu Glu Asp Pro Met Pro Gln Leu Asp Val				
235	240	245	250	

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 Thr Glu Ala Asn Lys Glu Phe Met Glu Gln Ser Glu Glu Leu Tyr Asp
 251 256 261 266

gct ctg atg gac tgt cac tgg cag ccc ctg gac aca gtg tct tca gag 868
 Ala Leu Met Asp Cys His Trp Gln Pro Leu Asp Thr Val Ser Ser Glu
 267 272 277 282

atc cct gcc atg atg tag ccaggc caaaggacaa gccaggttgc atgatgtgag 922
 Ile Pro Ala Met Met *
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 Met Ala Thr Ser Ile Gly Val
 1 5

tcc ttc tcg gtg ggc gac ggg gtg cct gag gct gag aag aac gca ggg 162
 Ser Phe Ser Val Gly Asp Gly Val Pro Glu Ala Glu Lys Asn Ala Gly
 8 13 18 23

gag ccc gag aac acc tat att ctg cgg cct gtt ttc cag cag agg ttc 210
 Glu Pro Glu Asn Thr Tyr Ile Leu Arg Pro Val Phe Gln Gln Arg Phe
 24 29 34 39

agg ccc tct gtg gtt aaa gac tgt atc cat gct gtg ctc aag gag gaa 258
 Arg Pro Ser Val Val Lys Asp Cys Ile His Ala Val Leu Lys Glu Glu
 40 45 50 55

ctg gca aat gct gaa tat tct cca gaa gaa atg cct cag ctt aca aaa 306
 Leu Ala Asn Ala Glu Tyr Ser Pro Glu Glu Met Pro Gln Leu Thr Lys
 56 61 66 71

cat tta tca gaa aac att aaa gat aaa tta aaa gaa atg gga ttt gac 354
 His Leu Ser Glu Asn Ile Lys Asp Lys Leu Lys Glu Met Gly Phe Asp
 72 77 82 87

cga tac aaa atg gtg gtg caa gta gtg att gga gaa caa aga ggt gaa 402

Arg Tyr Lys Met Val Val Gln Val Val Ile Gly Glu Gln Arg Gly Glu	
88 93 98 103	
gga gta ttc atg gct tct cgc tgt ttc tgg gat gct gac act gac aac	450
Gly Val Phe Met Ala Ser Arg Cys Phe Trp Asp Ala Asp Thr Asp Asn	
104 109 114 119	
tat act cat gat gtt ttc atg aat gac agt tta ttc tgc gtt gta gca	498
Tyr Thr His Asp Val Phe Met Asn Asp Ser Leu Phe Cys Val Val Ala	
120 125 130 135	
gca ttt ggc tgt ttc tac tac tga atgaatcttt gaaaagctgg taaaagacat	552
Ala Phe Gly Cys Phe Tyr Tyr *	
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ggtggccggg ctgggcgccg gtagtggaag gcgacggcgc ggctggaaa atg cca	235
	Met Pro
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gtc cat tcc cga ggg gat aag aag gag acc aac cat cac gat gag atg	283
Val His Ser Arg Gly Asp Lys Lys Glu Thr Asn His His Asp Glu Met	
3 8 13 18	
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Glu Val Asp Tyr Ala Glu Asn Glu Gly Ser Ser Ser Glu Asp Glu Asp	
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act gag agc tcg tcg gtc tcc gag gat gga gat agc tca gaa atg gat	379
Thr Glu Ser Ser Ser Val Ser Glu Asp Gly Asp Ser Ser Ser Glu Met Asp	
35 40 45 50	
gat gaa gac tgt gaa aga aga aga atg gaa tgt ttg gat gaa atg tcc	427
Asp Glu Asp Cys Glu Arg Arg Arg Met Glu Cys Leu Asp Glu Met Ser	
51 56 61 66	

aat ctt gaa aaa cag ttt acc gat ctc aaa gat caa ctt tat aaa gaa	475
Asn Leu Glu Lys Gln Phe Thr Asp Leu Lys Asp Gln Leu Tyr Lys Glu	
67 72 77 82	
cga tta agt cag gtg gat gca aaa cta caa gaa gtc ata gct gga aaa	523
Arg Leu Ser Gln Val Asp Ala Lys Leu Gln Glu Val Ile Ala Gly Lys	
83 88 93 98	
gca cca gaa tac ttg gaa ccg ctg gca act tta cag gaa aat atg caa	571
Ala Pro Glu Tyr Leu Glu Pro Leu Ala Thr Leu Gln Glu Asn Met Gln	
99 104 109 114	
att cgt aca aag gta gca gga atc tat aga gag ctc tgc tta gaa tct	619
Ile Arg Thr Lys Val Ala Gly Ile Tyr Arg Glu Leu Cys Leu Glu Ser	
115 120 125 130	
gta aag aac aaa tat gaa tgt gaa att caa gct tct cgc cag cat tgt	667
Val Lys Asn Lys Tyr Glu Cys Glu Ile Gln Ala Ser Arg Gln His Cys	
131 136 141 146	
gag agc gaa aag ctg ttg cta tat gat aca gtc cag agt gaa cta gag	715
Glu Ser Glu Lys Leu Leu Leu Tyr Asp Thr Val Gln Ser Glu Leu Glu	
147 152 157 162	
gag aag ata aga agg ctt gaa gag gat agg cac agc att gat att acc	763
Glu Lys Ile Arg Arg Leu Glu Glu Asp Arg His Ser Ile Asp Ile Thr	
163 168 173 178	
tca gag ctg tgg aat gat gag ctt cag tca aga aaa aag agg aag gat	811
Ser Glu Leu Trp Asn Asp Glu Leu Gln Ser Arg Lys Lys Arg Lys Asp	
179 184 189 194	
cct ttc tgg cct gac aaa aag aag cca gtt gtt gtt tca ggt cca tat	859
Pro Phe Trp Pro Asp Lys Lys Lys Pro Val Val Val Ser Gly Pro Tyr	
195 200 205 210	
ata gtt tat atg cta caa gat ctt gat att ctt gaa gac tgg aca aca	907
Ile Val Tyr Met Leu Gln Asp Leu Asp Ile Leu Glu Asp Trp Thr Thr	
211 216 221 226	
att agg aag gca atg gct aca ttg ggg cca cac aga gtg aaa acg gaa	955
Ile Arg Lys Ala Met Ala Thr Leu Gly Pro His Arg Val Lys Thr Glu	
227 232 237 242	
cca cct gtg aaa ctg gaa aaa cat ctg cac agt gct aga tct gaa gag	1003
Pro Pro Val Lys Leu Glu Lys His Leu His Ser Ala Arg Ser Glu Glu	
243 248 253 258	
gga aga cta tat tat gat ggt gaa tgg tat ata cgt gga caa aca ata	1051
Gly Arg Leu Tyr Tyr Asp Gly Glu Trp Tyr Ile Arg Gly Gln Thr Ile	
259 264 269 274	
tgt att gat aaa aaa gat gaa tgt cct aca agt gct gta att aca aca	1099
Cys Ile Asp Lys Lys Asp Glu Cys Pro Thr Ser Ala Val Ile Thr Thr	
275 280 285 290	

att aac cat gat gaa gtt tgg ttt aag agg cct gat gga agc aaa tct 1147
 Ile Asn His Asp Glu Val Trp Phe Lys Arg Pro Asp Gly Ser Lys Ser
 291 296 301 306

aag ctt tac att tca cag cta cag aaa gga aaa tat tca att aaa cat 1195
 Lys Leu Tyr Ile Ser Gln Leu Gln Lys Gly Lys Tyr Ser Ile Lys His
 307 312 317 322

tca taa tcatgattta agtggttatct aaatttacct tattagtgtt accaaatgta 1251
 Ser *
 323

agtgccatga gagtaaaaaa atgtattcaa taacttaata ttctcactga atcatgagag 1311

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 cccggtctct tcccacatct gggagggggc agagtcagac aactgctggg ttcgtcccta 180
 agagaggtca tctgactggc tgttcagcct aggctgcaca cccccccact ttcctctacc 240
 aggccacacc ggaggcagtg ctcacacagg caagctacca ggccacaaca acgacaccca 300
 cctcacctct ggcacctctg agcatccacg tacttgcaag aactcttgct cacatcagct 360
 aagagattgc acctgctgac ctagagattc cggcctgtgc tctgtgtgct ctgagcaggg 420
 caaccagtag cacc atg tct gtg act ggc ggg aag atg gca ccg tcc ctc 470
 Met Ser Val Thr Gly Gly Lys Met Ala Pro Ser Leu
 1 5 10

acc cag gag atc ctc agc cac ctg ggc ctg gcc agc aag act gca gcg 518
 Thr Gln Glu Ile Leu Ser His Leu Gly Leu Ala Ser Lys Thr Ala Ala
 13 18 23 28

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 Trp Gly Thr Leu Gly Thr Leu Arg Thr Phe Leu Asn Phe Ser Val Asp
 29 34 39 44

aag gat gcg cag agg cta ctg agg gcc att act ggc caa ggc gtg gac	614
Lys Asp Ala Gln Arg Leu Leu Arg Ala Ile Thr Gly Gln Gly Val Asp	
45 50 55 60	
cgc agt gcc att gtg gac gtg ctg acc aac cgg agc aga gag caa agg	662
Arg Ser Ala Ile Val Asp Val Leu Thr Asn Arg Ser Arg Glu Gln Arg	
61 66 71 76	
cag ctc atc tca cga aac ttc cag gag cgc acc caa cag gac ctg atg	710
Gln Leu Ile Ser Arg Asn Phe Gln Glu Arg Thr Gln Gln Asp Leu Met	
77 82 87 92	
aag tct cta cag gca gca ctt tcc ggc aac ctg gag agg att gtg atg	758
Lys Ser Leu Gln Ala Ala Leu Ser Gly Asn Leu Glu Arg Ile Val Met	
93 98 103 108	
gct ctg ctg cag ccc aca gcc cag ttt gac gcc cag gaa ttg agg aca	806
Ala Leu Leu Gln Pro Thr Ala Gln Phe Asp Ala Gln Glu Leu Arg Thr	
109 114 119 124	
gct ctg aag gcc tca gat tct gct gtg gac gtg gcc att gaa att ctt	854
Ala Leu Lys Ala Ser Asp Ser Ala Val Asp Val Ala Ile Glu Ile Leu	
125 130 135 140	
gcc act cga acc cca ccc cag ctg cag gag tgc ctg gca gtc tac aaa	902
Ala Thr Arg Thr Pro Pro Gln Leu Gln Glu Cys Leu Ala Val Tyr Lys	
141 146 151 156	
cac aat ttc cag gtg gag gct gtg gat gac atc aca tct gag acc agt	950
His Asn Phe Gln Val Glu Ala Val Asp Asp Ile Thr Ser Glu Thr Ser	
157 162 167 172	
ggc atc ttg cag gac ctg ctg ttg gcc ctg gcc aag ggg ggc cgt gac	998
Gly Ile Leu Gln Asp Leu Leu Leu Ala Leu Ala Lys Gly Gly Arg Asp	
173 178 183 188	
agc tac tct gga atc att gac tat aat ctg gca gaa caa gat gtc cag	1046
Ser Tyr Ser Gly Ile Ile Asp Tyr Asn Leu Ala Glu Gln Asp Val Gln	
189 194 199 204	
gca ctg cag cgg gca gaa gga cct agc aga gag gaa aca tgg gtc cca	1094
Ala Leu Gln Arg Ala Glu Gly Pro Ser Arg Glu Glu Thr Trp Val Pro	
205 210 215 220	
gtc ttc acc cag cga aat cct gaa cac ctc atc cga gtg ttt gat cag	1142
Val Phe Thr Gln Arg Asn Pro Glu His Leu Ile Arg Val Phe Asp Gln	
221 226 231 236	
tac cag cgg agc act ggg caa gag ctg gag gag gct gtc cag aac cgt	1190
Tyr Gln Arg Ser Thr Gly Gln Glu Leu Glu Glu Ala Val Gln Asn Arg	
237 242 247 252	
ttc cat gga gat gct cag gtg gct ctg ctc ggc cta gct tcg gtg atc	1238
Phe His Gly Asp Ala Gln Val Ala Leu Leu Gly Leu Ala Ser Val Ile	
253 258 263 268	
aag aac aca ccg ctg tac ttt gct gac aaa ctt cat caa gcc ctc cag	1286

Lys	Asn	Thr	Pro	Leu	Tyr	Phe	Ala	Asp	Lys	Leu	His	Gln	Ala	Leu	Gln	
269					274					279					284	
gaa act gag ccc aat tac caa gtc ctg att cgc atc ctt atc tct cga																1334
Glu	Thr	Glu	Pro	Asn	Tyr	Gln	Val	Leu	Ile	Arg	Ile	Leu	Ile	Ser	Arg	
285					290					295					300	
tgt gag act gac ctt ctg agt atc aga gct gag ttc agg aag aaa ttt																1382
Cys	Glu	Thr	Asp	Leu	Leu	Ser	Ile	Arg	Ala	Glu	Phe	Arg	Lys	Lys	Phe	
301					306					311					316	
ggg aag tcc ctc tac tct tct ctc cag gat gca gtg aaa ggg gat tgc																1430
Gly	Lys	Ser	Leu	Tyr	Ser	Ser	Leu	Gln	Asp	Ala	Val	Lys	Gly	Asp	Cys	
317					322					327					332	
cag tca gcc ctc ctg gcc ttg tgc agg gct gaa gac atg tga gacttcc																1479
Gln	Ser	Ala	Leu	Leu	Ala	Leu	Cys	Arg	Ala	Glu	Asp	Met	*			
333					338					343						
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gttgaggctg gaactgtttc tttaaaatcc cttaattttc ccatctcaaa attatatctg																1659
tacctgggtc atccagctcc ttcttgggtg tggggaaatg agttttcttt gatagtttct																1719
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agtctgaatg ccaga atg gat aac cgt ttt gct aca gca ttt gta att gct																171
		Met	Asp	Asn	Arg	Phe	Ala	Thr	Ala	Phe	Val	Ile	Ala			
		1				5					10					
tgt gtg ctt agc ctc att tcc acc atc tac atg gca gcc tcc att ggc																219
Cys	Val	Leu	Ser	Leu	Ile	Ser	Thr	Ile	Tyr	Met	Ala	Ala	Ser	Ile	Gly	
13					18					23					28	
aca gac ttc tgg tat gaa tat cga agt cca gtt caa gaa aat tcc agt																267

Thr	Asp	Phe	Trp	Tyr	Glu	Tyr	Arg	Ser	Pro	Val	Gln	Glu	Asn	Ser	Ser		
29					34					39					44		
gat	ttg	aat	aaa	agc	atc	tgg	gat	gaa	ttc	att	agt	gat	gag	gca	gat		315
Asp	Leu	Asn	Lys	Ser	Ile	Trp	Asp	Glu	Phe	Ile	Ser	Asp	Glu	Ala	Asp		
45					50					55					60		
gaa	aag	act	tat	aat	gat	gca	ctt	ttt	cga	tac	aat	ggc	aca	gtg	gga		363
Glu	Lys	Thr	Tyr	Asn	Asp	Ala	Leu	Phe	Arg	Tyr	Asn	Gly	Thr	Val	Gly		
61					66					71					76		
ttg	tgg	aga	cgg	tgt	atc	acc	ata	ccc	aaa	aac	atg	cat	tgg	tat	agc		411
Leu	Trp	Arg	Arg	Cys	Ile	Thr	Ile	Pro	Lys	Asn	Met	His	Trp	Tyr	Ser		
77					82					87					92		
cca	cca	gaa	agg	aca	gag	tca	ttt	gat	gtg	gtc	aca	aaa	tgt	gtg	agt		459
Pro	Pro	Glu	Arg	Thr	Glu	Ser	Phe	Asp	Val	Val	Thr	Lys	Cys	Val	Ser		
93					98					103					108		
ttc	aca	cta	act	gag	cag	ttc	atg	gag	aaa	ttt	gtt	gat	ccc	gga	aac		507
Phe	Thr	Leu	Thr	Glu	Gln	Phe	Met	Glu	Lys	Phe	Val	Asp	Pro	Gly	Asn		
109					114					119					124		
cac	aat	agc	ggg	att	gat	ctc	ctt	agg	acc	tat	ctt	tgg	cgt	tgc	cag		555
His	Asn	Ser	Gly	Ile	Asp	Leu	Leu	Arg	Thr	Tyr	Leu	Trp	Arg	Cys	Gln		
125					130					135					140		
ttc	ctt	tta	cct	ttt	gtg	agt	tta	ggt	ttg	atg	tgc	ttt	ggg	gct	ttg		603
Phe	Leu	Leu	Pro	Phe	Val	Ser	Leu	Gly	Leu	Met	Cys	Phe	Gly	Ala	Leu		
141					146					151					156		
atc	gga	ctt	tgt	gct	tgc	att	tgc	cga	agc	tta	tat	ccc	acc	att	gcc		651
Ile	Gly	Leu	Cys	Ala	Cys	Ile	Cys	Arg	Ser	Leu	Tyr	Pro	Thr	Ile	Ala		
157					162					167					172		
acg	ggc	att	ctc	cat	ctc	ctt	gca	ggt	ctg	tgt	aca	ctg	ggc	tca	gta		699
Thr	Gly	Ile	Leu	His	Leu	Leu	Ala	Gly	Leu	Cys	Thr	Leu	Gly	Ser	Val		
173					178					183					188		
agt	tgt	tat	gtt	gct	gga	att	gaa	cta	ctc	cac	cag	aaa	cta	gag	ctc		747
Ser	Cys	Tyr	Val	Ala	Gly	Ile	Glu	Leu	Leu	His	Gln	Lys	Leu	Glu	Leu		
189					194					199					204		
cct	gac	aat	gta	tcc	ggt	gaa	ttt	gga	tgg	tcc	ttc	tgc	ctg	gct	tgt		795
Pro	Asp	Asn	Val	Ser	Gly	Glu	Phe	Gly	Trp	Ser	Phe	Cys	Leu	Ala	Cys		
205					210					215					220		
gtc	tct	gct	ccc	tta	cag	ttc	atg	gct	tct	gct	ctc	ttc	atc	tgg	gct		843
Val	Ser	Ala	Pro	Leu	Gln	Phe	Met	Ala	Ser	Ala	Leu	Phe	Ile	Trp	Ala		
221					226					231					236		
gct	cac	acc	aac	cgg	aaa	gag	tac	acc	tta	atg	aag	gca	tat	cgt	gtg		891
Ala	His	Thr	Asn	Arg	Lys	Glu	Tyr	Thr	Leu	Met	Lys	Ala	Tyr	Arg	Val		
237					242					247					252		
gca	tga	gca	gaa	aact	gcct	gctt	ta	caatt	gccat	tttt	attttt	tt	aaaa	ataat			947
Ala	*																

253

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ggcgggccgtc acgcccgcgc cgcagcagcc ctgcagctct atg gca aca gcg ccg 175
Met Ala Thr Ala Pro
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ccg gct tcc cgc acg cgc ccc cgc agg cgc acg cgc acc cgc acc cgt 223
Pro Ala Ser Arg Thr Arg Pro Arg Arg Arg Thr Arg Thr Arg Thr Arg
6 11 16 21

ccc cgc cgc cct ccg gga ctg ggt gcg gcg gta ggg aag gcc ggg gcc 271
Pro Arg Arg Pro Pro Gly Leu Gly Ala Ala Val Gly Lys Ala Gly Ala
22 27 32 37

agg agt act tcc acc ccg gcg ggg gcc agc ccg gcc gct gcc tac cag 319
Arg Ser Thr Ser Thr Pro Ala Gly Ala Ser Pro Ala Ala Ala Tyr Gln
38 43 48 53

gcc gcc ccc cct cct cct ccg cat cct ccg cct ccg ccg cca cct ccc 367
Ala Ala Pro Pro Pro Pro Pro His Pro Pro Pro Pro Pro Pro Pro Pro
54 59 64 69

ccc tgc ggc ggg att gcc tgt cac ggg gag ccc gcg aag ttt tac gga 415
Pro Cys Gly Gly Ile Ala Cys His Gly Glu Pro Ala Lys Phe Tyr Gly
70 75 80 85

tac gat aac tta cag aga cag ccg att ttt acg acc cag caa gag gcc 463
Tyr Asp Asn Leu Gln Arg Gln Pro Ile Phe Thr Thr Gln Gln Glu Ala
86 91 96 101

gag ctg gta caa tat cct gac tgt aaa tcg tcc agt ggt aat att ggc 511
Glu Leu Val Gln Tyr Pro Asp Cys Lys Ser Ser Ser Gly Asn Ile Gly
102 107 112 117

gag gac cca gac cac tta aat cag agc tcg tct cct tct caa atg ttt 559
Glu Asp Pro Asp His Leu Asn Gln Ser Ser Ser Pro Ser Gln Met Phe
118 123 128 133

ccg tgg atg aga cca caa gct cct ggt aga cga aga gga aga caa acc 607
Pro Trp Met Arg Pro Gln Ala Pro Gly Arg Arg Arg Gly Arg Gln Thr
134 139 144 149

tac agt cgc ttc caa act cta gag ttg gaa aag gaa ttt ctt ttt aac 655
Tyr Ser Arg Phe Gln Thr Leu Glu Leu Glu Lys Glu Phe Leu Phe Asn
150 155 160 165

ccc tat ctg acc agg aaa aga aga atc gag gtt tcc cac gcc cta gcc 703
Pro Tyr Leu Thr Arg Lys Arg Arg Ile Glu Val Ser His Ala Leu Ala
166 171 176 181

ctc acc gag aga cag gta aaa atc tgg ttc cag aac agg aga atg aaa 751
Leu Thr Glu Arg Gln Val Lys Ile Trp Phe Gln Asn Arg Arg Met Lys
182 187 192 197

tgg aaa aag gaa aac aac aag gac aaa ttt ccc gtt tcc cgg cag gag 799
Trp Lys Lys Glu Asn Asn Lys Asp Lys Phe Pro Val Ser Arg Gln Glu
198 203 208 213

Leu	Asp	Lys	Glu	Asp	Thr	Gly	Arg	Gln	Lys	Leu	Ile	Ser	Thr	Gly	Ser		
19					24					29					34		
ctg	cca	gct	act	tta	caa	gga	gct	aca	gat	tct	tta	ggg	tta	gaa	tgg	260	
Leu	Pro	Ala	Thr	Leu	Gln	Gly	Ala	Thr	Asp	Ser	Leu	Gly	Leu	Glu	Trp		
35					40					45					50		
cac	ctt	cca	agt	ccc	gat	cct	gtc	act	ggt	ccg	tat	ctt	agt	cct	tta	308	
His	Leu	Pro	Ser	Pro	Asp	Pro	Val	Thr	Val	Pro	Tyr	Leu	Ser	Pro	Leu		
51					56					61					66		
gtg	gta	tgg	aaa	gaa	ctt	gaa	agc	tta	ttg	gaa	aat	gaa	ggg	gat	cat	356	
Val	Val	Trp	Lys	Glu	Leu	Glu	Ser	Leu	Leu	Glu	Asn	Glu	Gly	Asp	His		
67					72					77					82		
gca	ata	aca	gta	gca	gac	ttt	gtg	gac	cat	cat	cca	att	ggt	ttt	tgg	404	
Ala	Ile	Thr	Val	Ala	Asp	Phe	Val	Asp	His	His	Pro	Ile	Val	Phe	Trp		
83					88					93					98		
aac	ctg	gta	tgg	tat	ttc	aga	cgt	ctt	gac	ttg	ccc	agt	aac	tta	cct	452	
Asn	Leu	Val	Trp	Tyr	Phe	Arg	Arg	Leu	Asp	Leu	Pro	Ser	Asn	Leu	Pro		
99					104					109					114		
gga	ttg	att	ctt	tct	tct	gag	cac	tgt	aac	aag	tat	tca	aag	att	ccc	500	
Gly	Leu	Ile	Leu	Ser	Ser	Glu	His	Cys	Asn	Lys	Tyr	Ser	Lys	Ile	Pro		
115					120					125					130		
cgc	cac	tgt	atg	tct	gaa	gat	agc	aaa	tat	ggt	tta	ata	caa	atg	tta	548	
Arg	His	Cys	Met	Ser	Glu	Asp	Ser	Lys	Tyr	Val	Leu	Ile	Gln	Met	Leu		
131					136					141					146		
tgg	gac	aat	atg	aag	tta	cat	cag	gat	ccg	gga	cag	ccc	ttg	tac	att	596	
Trp	Asp	Asn	Met	Lys	Leu	His	Gln	Asp	Pro	Gly	Gln	Pro	Leu	Tyr	Ile		
147					152					157					162		
ctc	tgg	aat	gca	cac	acc	caa	aaa	tat	cca	atg	gtc	cat	tta	ttg	caa	644	
Leu	Trp	Asn	Ala	His	Thr	Gln	Lys	Tyr	Pro	Met	Val	His	Leu	Leu	Gln		
163					168					173					178		
aaa	agt	gat	aac	tca	ttt	aac	cag	gaa	ctg	ttg	aaa	agt	atg	gta	aaa	692	
Lys	Ser	Asp	Asn	Ser	Phe	Asn	Gln	Glu	Leu	Leu	Lys	Ser	Met	Val	Lys		
179					184					189					194		
agc	att	aaa	atg	aat	gat	gtc	tat	gga	cca	atg	agt	cag	att	tta	gag	740	
Ser	Ile	Lys	Met	Asn	Asp	Val	Tyr	Gly	Pro	Met	Ser	Gln	Ile	Leu	Glu		
195					200					205					210		
aca	ctg	aat	aag	tgt	cca	cat	ttt	aaa	aga	cag	agg	agt	tta	tac	aga	788	
Thr	Leu	Asn	Lys	Cys	Pro	His	Phe	Lys	Arg	Gln	Arg	Ser	Leu	Tyr	Arg		
211					216					221					226		
gaa	ata	cta	ttt	ctc	tca	ctt	gtg	gca	ctg	gga	aga	gaa	aac	att	gat	836	
Glu	Ile	Leu	Phe	Leu	Ser	Leu	Val	Ala	Leu	Gly	Arg	Glu	Asn	Ile	Asp		
227					232					237					242		
ata	gat	gct	ttt	gat	aaa	gag	tac	aag	atg	gca	tac	gat	cgt	ctc	aca	884	
Ile	Asp	Ala	Phe	Asp	Lys	Glu	Tyr	Lys	Met	Ala	Tyr	Asp	Arg	Leu	Thr		

243	248	253	258	
cct agt caa gtc aag agt aca cac aac tgt gat aga cca cca agt aca				932
Pro Ser Gln Val Lys Ser Thr His Asn Cys Asp Arg Pro Pro Ser Thr				
259	264	269	274	
ggg gtg atg gaa tgt cga aaa acc ttt gga gaa cct tat ctt taa gat				980
Gly Val Met Glu Cys Arg Lys Thr Phe Gly Glu Pro Tyr Leu *				
275	280	285		
gtatttgat gtgtaaacad tcaatgtata ttgtatagtc agtgataaaa ataacacttt				1040
tagactctaa atattttttt ttcaattttt gaaaatacaa tttgtaaatg gttcaaaaga				1100
ctcagacagc ttatgtacag aatgtttgaa gaagagaata gtgacaagtg gggagaaagc				1160
cactttgttt ctcattttctt ttttcttctt ctttaactcc cctgtaatag gaaataaagt				1220
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aagtttggtg caagatatatt atctaacttc tgtgtcaaaa ttagcgacct gctatggcaa	180
tgaagaaaga aactgaattt gtcattttca cctgaagaaa a atg ata gac aaa	233
Met Ile Asp Lys	
1	

aat caa acc tgt ggt gta gga cag gat tct gtg ccc tat atg att tgt	281
Asn Gln Thr Cys Gly Val Gly Gln Asp Ser Val Pro Tyr Met Ile Cys	
5 10 15 20	

ctg att cac ata ctc gaa gaa tgg ttt ggt gtg gag cag ttg gag gac	329
Leu Ile His Ile Leu Glu Glu Trp Phe Gly Val Glu Gln Leu Glu Asp	
21 26 31 36	

tat ttg aat ttt gca aac tat ctc ttg tgg gtt ttt aca cca cta ata	377
Tyr Leu Asn Phe Ala Asn Tyr Leu Leu Trp Val Phe Thr Pro Leu Ile	
37 42 47 52	

ctt tta ata ctt cct tac ttt act atc ttt ctt ctc tac ctt act att	425
Leu Leu Ile Leu Pro Tyr Phe Thr Ile Phe Leu Leu Tyr Leu Thr Ile	

53	58	63	68	
att ttc tta cac att tat aag aga aag aat gta ttg aaa gaa gcc tac				473
Ile Phe Leu His Ile Tyr Lys Arg Lys Asn Val Leu Lys Glu Ala Tyr				
69	74	79	84	
tct cat aat tta tgg gat ggt gca agg aaa aca gtg gca act ctg tgg				521
Ser His Asn Leu Trp Asp Gly Ala Arg Lys Thr Val Ala Thr Leu Trp				
85	90	95	100	
gat gga cat gca gcc gtt tgg cat ggt tat gaa gtt cat gga atg gaa				569
Asp Gly His Ala Ala Val Trp His Gly Tyr Glu Val His Gly Met Glu				
101	106	111	116	
aaa ata cca gaa gat gga cca gca ctt ata att ttt tat cat gga gct				617
Lys Ile Pro Glu Asp Gly Pro Ala Leu Ile Ile Phe Tyr His Gly Ala				
117	122	127	132	
att cct ata gat ttt tac tat ttc atg gct aaa ata ttt ata cac aaa				665
Ile Pro Ile Asp Phe Tyr Tyr Phe Met Ala Lys Ile Phe Ile His Lys				
133	138	143	148	
ggc aga act tgc cga gta gta gct gat cac ttt gtc ttt aaa att cca				713
Gly Arg Thr Cys Arg Val Val Ala Asp His Phe Val Phe Lys Ile Pro				
149	154	159	164	
ggg ttt agt tta tta ctg gat gtg ttt tgt gct cta cat gga cca aga				761
Gly Phe Ser Leu Leu Leu Asp Val Phe Cys Ala Leu His Gly Pro Arg				
165	170	175	180	
gaa aaa tgt gtt gaa att ctg agg agt ggc cac ttg tta gct atc tca				809
Glu Lys Cys Val Glu Ile Leu Arg Ser Gly His Leu Leu Ala Ile Ser				
181	186	191	196	
cca ggt gga gtt cga gaa gcc cta att agt gat gaa act tat aac atc				857
Pro Gly Gly Val Arg Glu Ala Leu Ile Ser Asp Glu Thr Tyr Asn Ile				
197	202	207	212	
gta tgg ggt cat cgc aga ggc ttt gct cag gtt gca att gat gca aaa				905
Val Trp Gly His Arg Arg Gly Phe Ala Gln Val Ala Ile Asp Ala Lys				
213	218	223	228	
gtg ccc att att cct atg ttt aca caa aat att cga gaa gga ttt aga				953
Val Pro Ile Ile Pro Met Phe Thr Gln Asn Ile Arg Glu Gly Phe Arg				
229	234	239	244	
tca ctt gga gga aca agg tta ttt agg tgg ctt tat gaa aaa ttc cgc				1001
Ser Leu Gly Gly Thr Arg Leu Phe Arg Trp Leu Tyr Glu Lys Phe Arg				
245	250	255	260	
tat cca ttt gct cca atg tat gga ggt ttt cca gtg aag tta cgg acc				1049
Tyr Pro Phe Ala Pro Met Tyr Gly Gly Phe Pro Val Lys Leu Arg Thr				
261	266	271	276	
tat tta ggc gac ccc att ccg tat gac cca cag ata aca gcg gaa gaa				1097
Tyr Leu Gly Asp Pro Ile Pro Tyr Asp Pro Gln Ile Thr Ala Glu Glu				
277	282	287	292	

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cct ggg ccc ttt cct ggg att gtg gac atg ttc gga act gga ggt ggc				963
Pro Gly Pro Phe Pro Gly Ile Val Asp Met Phe Gly Thr Gly Gly Gly				
216	221	226	231	
ctg ctg gag tat cgg gct agt ctg ctg gct ggg aag ggt ttt gct gtg				1011
Leu Leu Glu Tyr Arg Ala Ser Leu Leu Ala Gly Lys Gly Phe Ala Val				
232	237	242	247	
atg gct ctg gct tat tat aac tat gaa gac ctc ccc aag acc atg gag				1059
Met Ala Leu Ala Tyr Tyr Asn Tyr Glu Asp Leu Pro Lys Thr Met Glu				
248	253	258	263	
acg ctc cat ctg gag tac ttt gaa gaa gcc atg aac tac ttg ctc agt				1107
Thr Leu His Leu Glu Tyr Phe Glu Glu Ala Met Asn Tyr Leu Leu Ser				
264	269	274	279	
cat ccc gag gta aaa ggt cca gga gtt ggg ctg ctt gga att tcc aaa				1155
His Pro Glu Val Lys Gly Pro Gly Val Gly Leu Leu Gly Ile Ser Lys				
280	285	290	295	
ggg ggt gag ctc tgc ctt tcc atg gcc tct ttc ctg aag ggc atc acg				1203
Gly Gly Glu Leu Cys Leu Ser Met Ala Ser Phe Leu Lys Gly Ile Thr				
296	301	306	311	
gct gct gtc gtc atc aac ggc tct gtg gcc aat gtt ggg gga acc tta				1251
Ala Ala Val Val Ile Asn Gly Ser Val Ala Asn Val Gly Gly Thr Leu				
312	317	322	327	
cgc tac aag ggc gag acc ctg ccc cct gtg ggc gtc aac aga aat cgc				1299
Arg Tyr Lys Gly Glu Thr Leu Pro Pro Val Gly Val Asn Arg Asn Arg				
328	333	338	343	
atc aag gtg acc aaa gat ggc tat gca gac att gtg gat gtc ctg aac				1347
Ile Lys Val Thr Lys Asp Gly Tyr Ala Asp Ile Val Asp Val Leu Asn				
344	349	354	359	
agc cct ttg gaa gga cct gac cag aag agc ttc att cct gtg gaa agg				1395
Ser Pro Leu Glu Gly Pro Asp Gln Lys Ser Phe Ile Pro Val Glu Arg				
360	365	370	375	
gca gag agc acc ttc ctg ttc ctg gta ggt cag gat gac cac aac tgg				1443
Ala Glu Ser Thr Phe Leu Phe Leu Val Gly Gln Asp Asp His Asn Trp				
376	381	386	391	
aag agt gag ttc tat gct aat gag gcc tgt aaa cgc ttg cag gcc cat				1491
Lys Ser Glu Phe Tyr Ala Asn Glu Ala Cys Lys Arg Leu Gln Ala His				
392	397	402	407	
ggg agg aga aag ccc cag atc atc tgt tac cca gag aca ggg cac tat				1539
Gly Arg Arg Lys Pro Gln Ile Ile Cys Tyr Pro Glu Thr Gly His Tyr				
408	413	418	423	
att gag cct cct tac ttc ccc ctg tgt cgg gct tcc ctg cat gcc ttg				1587
Ile Glu Pro Pro Tyr Phe Pro Leu Cys Arg Ala Ser Leu His Ala Leu				
424	429	434	439	

gtg ggc agt cct att atc tgg gga ggg gag ccc agg gct cat gcc atg	1635
Val Gly Ser Pro Ile Ile Trp Gly Gly Glu Pro Arg Ala His Ala Met	
440 445 450 455	
gct cag gtg gat gct tgg aaa caa ctc cag act ttc ttc cac aaa cac	1683
Ala Gln Val Asp Ala Trp Lys Gln Leu Gln Thr Phe Phe His Lys His	
456 461 466 471	
ttg ggt ggc cac gag ggg aca atc cca tca aaa gtg taa attttatttg	1732
Leu Gly Gly His Glu Gly Thr Ile Pro Ser Lys Val *	
472 477 482	
atcatgtggc ctctctgttg ctaatctctc ctggaaacat ctgccacatt tagtgtgtgt	1792
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tgagtgcaga tctgg atg gag att tgt gaa ggc aag gag att gaa gac tgc	171
Met Glu Ile Cys Glu Gly Lys Glu Ile Glu Asp Ser	
1 5 10	
agg cca aga att cgg cac gag ggg gca ctt ctt tgt gaa ttc tgg gga	219
Arg Pro Arg Ile Arg His Glu Gly Ala Leu Leu Cys Glu Phe Trp Gly	
13 18 23 28	
gac att gcc aag gaa ttt tac tgg aag act cca tgc cct ggc cca ttc	267
Asp Ile Ala Lys Glu Phe Tyr Trp Lys Thr Pro Cys Pro Gly Pro Phe	
29 34 39 44	
ctt cgg tac aac ttt gat gtg act aaa ggg aaa atc ttc att gag tgg	315
Leu Arg Tyr Asn Phe Asp Val Thr Lys Gly Lys Ile Phe Ile Glu Trp	
45 50 55 60	
atg aaa gga gca act acc aac atc tgc tac aat gta ctg gat cga aat	363
Met Lys Gly Ala Thr Thr Asn Ile Cys Tyr Asn Val Leu Asp Arg Asn	
61 66 71 76	
gtc cat gag aaa aag ctt gga gat aaa gtt gct ttt tac tgg gag ggc	411

Val	His	Glu	Lys	Lys	Leu	Gly	Asp	Lys	Val	Ala	Phe	Tyr	Trp	Glu	Gly	
77					82					87					92	
aat	gag	cca	ggg	gag	acc	act	cag	atc	aca	tac	cat	cag	ctt	ctg	gtc	459
Asn	Glu	Pro	Gly	Glu	Thr	Thr	Gln	Ile	Thr	Tyr	His	Gln	Leu	Leu	Val	
93					98					103					108	
caa	gtg	tgt	cag	ttc	agc	aat	gtt	ctt	cga	aaa	cag	ggc	att	cac	aag	507
Gln	Val	Cys	Gln	Phe	Ser	Asn	Val	Leu	Arg	Lys	Gln	Gly	Ile	His	Lys	
109					114					119					124	
ggg	gac	cga	gtg	gcc	atc	tac	atg	cct	atg	atc	cca	gag	ctt	gtg	gtg	555
Gly	Asp	Arg	Val	Ala	Ile	Tyr	Met	Pro	Met	Ile	Pro	Glu	Leu	Val	Val	
125					130					135					140	
gcc	atg	ctg	gca	tgt	gcc	cgc	att	ggg	gct	ttg	cac	tcc	att	gtg	ttt	603
Ala	Met	Leu	Ala	Cys	Ala	Arg	Ile	Gly	Ala	Leu	His	Ser	Ile	Val	Phe	
141					146					151					156	
gca	ggc	ttc	tct	tca	gag	tct	cta	tgt	gaa	cgg	atc	ttg	gat	tcc	agc	651
Ala	Gly	Phe	Ser	Ser	Glu	Ser	Leu	Cys	Glu	Arg	Ile	Leu	Asp	Ser	Ser	
157					162					167					172	
tgc	agt	ctt	ctc	atc	act	aca	gat	gcc	ttc	tac	agg	ggg	gaa	aag	ctt	699
Cys	Ser	Leu	Leu	Ile	Thr	Thr	Asp	Ala	Phe	Tyr	Arg	Gly	Glu	Lys	Leu	
173					178					183					188	
gtg	aac	ctg	aag	gag	ctg	gct	gac	gag	gcc	ctg	cag	aag	tgt	cag	gag	747
Val	Asn	Leu	Lys	Glu	Leu	Ala	Asp	Glu	Ala	Leu	Gln	Lys	Cys	Gln	Glu	
189					194					199					204	
aag	ggt	ttc	cca	gta	aga	tgc	tgc	att	gtg	gtc	aag	cac	ctg	ggg	cgg	795
Lys	Gly	Phe	Pro	Val	Arg	Cys	Cys	Ile	Val	Val	Lys	His	Leu	Gly	Arg	
205					210					215					220	
gca	gag	ctc	ggc	atg	ggt	gac	tcc	acc	agc	cag	tcc	ccc	cca	att	aag	843
Ala	Glu	Leu	Gly	Met	Gly	Asp	Ser	Thr	Ser	Gln	Ser	Pro	Pro	Ile	Lys	
221					226					231					236	
agg	tca	tgc	cca	gat	gtg	cag	atc	tca	tgg	aac	caa	ggg	att	gac	ttg	891
Arg	Ser	Cys	Pro	Asp	Val	Gln	Ile	Ser	Trp	Asn	Gln	Gly	Ile	Asp	Leu	
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tgg	tgg	cat	gag	ctc	atg	caa	gag	gca	ggg	gat	gag	tgt	gag	ccc	gag	939
Trp	Trp	His	Glu	Leu	Met	Gln	Glu	Ala	Gly	Asp	Glu	Cys	Glu	Pro	Glu	
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Trp	Cys	Asp	Ala	Glu	Asp	Pro	Leu	Phe	Ile	Leu	Tyr	Thr	Ser	Gly	Ser	
269					274					279					284	
aca	ggc	aaa	ccc	aag	ggt	gtg	gtt	cac	aca	gtt	ggg	ggc	tac	atg	ctc	1035
Thr	Gly	Lys	Pro	Lys	Gly	Val	Val	His	Thr	Val	Gly	Gly	Tyr	Met	Leu	
285					290					295					300	
tat	gta	gcc	aca	acc	ttc	aag	tat	gtg	ttt	gac	ttc	cat	gca	gag	gat	1083
Tyr	Val	Ala	Thr	Thr	Phe	Lys	Tyr	Val	Phe	Asp	Phe	His	Ala	Glu	Asp	

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Val Phe Trp Cys Thr Ala Asp Ile Gly Trp Ile Thr Gly His Ser Tyr																										
317	322															327					332					
gtc acc tat ggg cca ctg gcc aat ggt gcc acc agt gtt ttg ttt gag																										1179
Val Thr Tyr Gly Pro Leu Ala Asn Gly Ala Thr Ser Val Leu Phe Glu																										
333	338															343					348					
ggg att ccc aca tat ccg gac gtg aac cgc ctg tgg agc att gtg gac																										1227
Gly Ile Pro Thr Tyr Pro Asp Val Asn Arg Leu Trp Ser Ile Val Asp																										
349	354															359					364					
aaa tac aag gtg acc aag ttc tac aca gca ccc aca gcc atc cgt ctg																										1275
Lys Tyr Lys Val Thr Lys Phe Tyr Thr Ala Pro Thr Ala Ile Arg Leu																										
365	370															375					380					
ctc atg aag ttt gga gat gag cct gtc acc aag cat agc cgg gca tcc																										1323
Leu Met Lys Phe Gly Asp Glu Pro Val Thr Lys His Ser Arg Ala Ser																										
381	386															391					396					
ttg cag gtg tta ggc aca gtg ggt gaa ccc atc aac cct gag gcc tgg																										1371
Leu Gln Val Leu Gly Thr Val Gly Glu Pro Ile Asn Pro Glu Ala Trp																										
397	402															407					412					
cta tgg tac cac cgg gtg gta ggt gcc cag cgc tgc ccc atc gtg gac																										1419
Leu Trp Tyr His Arg Val Val Gly Ala Gln Arg Cys Pro Ile Val Asp																										
413	418															423					428					
acc ttc tgg caa aca gag aca ggt ggc cac atg ttg act ccc ctt cct																										1467
Thr Phe Trp Gln Thr Glu Thr Gly Gly His Met Leu Thr Pro Leu Pro																										
429	434															439					444					
ggt gcc aca ccc atg aaa ccc ggt tct gct act ttc cca ttc ttt ggt																										1515
Gly Ala Thr Pro Met Lys Pro Gly Ser Ala Thr Phe Pro Phe Phe Gly																										
445	450															455					460					
gta gct cct gca atc ctg aat gag tcc ggg gaa gag ttg gaa ggt gaa																										1563
Val Ala Pro Ala Ile Leu Asn Glu Ser Gly Glu Glu Leu Glu Gly Glu																										
461	466															471					476					
gct gaa ggt tat ctg gtg ttc aag cag ccc tgg cca ggg atc atg cgc																										1611
Ala Glu Gly Tyr Leu Val Phe Lys Gln Pro Trp Pro Gly Ile Met Arg																										
477	482															487					492					
aca gtc tat ggg aac cac gaa cgc ttt gag aca acc tac ttt aag aag																										1659
Thr Val Tyr Gly Asn His Glu Arg Phe Glu Thr Thr Tyr Phe Lys Lys																										
493	498															503					508					
ttt cct gga tac tat gtt aca gga gat ggc tgc cag cgg gac cag gat																										1707
Phe Pro Gly Tyr Tyr Val Thr Gly Asp Gly Cys Gln Arg Asp Gln Asp																										
509	514															519					524					
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Gly Tyr Tyr Trp Ile Thr Gly Arg Ile Asp Asp Met Leu Asn Val Ser																										
525	530															535					540					

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Gly His Leu Leu Ser Thr Ala Glu Val Glu Ser Ala Leu Val Glu His	
541 546 551 556	

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Glu Ala Val Ala Glu Ala Ala Val Val Gly His Pro His Pro Val Lys	
557 562 567 572	

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Gly Glu Cys Leu Tyr Cys Phe Val Thr Leu Cys Asp Gly His Thr Phe	
573 578 583 588	

agc ccc aag ctc acc gag gag ctc aag aag cag att ^s aga gaa aag att	1947
Ser Pro Lys Leu Thr Glu Glu Leu Lys Lys Gln Ile Arg Glu Lys Ile	
589 594 599 604	

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Gly Pro Ile Ala Thr Pro Asp Tyr Ile Gln Asn Ala Pro Gly Leu Pro	
605 610 615 620	

aaa acc cgc tca ggg aaa atc atg agg cga gtg ctt cgg aag att gct	2043
Lys Thr Arg Ser Gly Lys Ile Met Arg Arg Val Leu Arg Lys Ile Ala	
621 626 631 636	

cag aat gac cat gac ctc ggg gac atg tct act gtg gct gac cca tct	2091
Gln Asn Asp His Asp Leu Gly Asp Met Ser Thr Val Ala Asp Pro Ser	
637 642 647 652	

gtc atc agt cac ctc ttc agc cac cgc tgc ctg acc atc cag tga aca	2139
Val Ile Ser His Leu Phe Ser His Arg Cys Leu Thr Ile Gln *	
653 658 663	

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ctcaggagtg ctgagggcca gtgttgaccc aactaccct cccttgacca gctgtctggg	2259
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accggaaacc agctttgtct ccaggtagag acaacatcct gtgactgcca ggcagaaagg	2319
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acagggccca ggtcagcctc agtctgctgt gcctccagac tgcagagctc tcagaaccca	2379
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gaacagagac gaaaaggcta cctctcctac ccaagttaag tgttcaaagg ggatgtgagg	2439
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gcctccactg aagcagggag gcagctgtgt aatcctatgt cagctctctt aggaagcccc	2499
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agtacttata ttgggcatgc acttgccctt aaaaacaatg atttgtgagt ccaggaacaa	2559
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tttactatatt ttaaaatatt ttgctgcttc tggtctgggt ctgaattccc ttttgtgcca	2619
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gatgccagta ctgtctgccc attggctcca ggggctgtat gggcagattc agtctccaga	2679
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gggtattcag atcatctgct tctttgaagg agtaaagtgt ttttgttcct agggccagag	2739
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gagcttgtct tctttgtcct ctgttccac cctcccctga acagaaccca gcccataaga	2799
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gacattctca gatgaaactc tgttttcttg cccagtcag gctcaagccc tgtggttgta	2859
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2891

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Met Asn Leu Val Asp Leu Trp Leu Thr Arg Ser
1 5

12 17 22 27

28 33 38 43

44 49 54 59

60 65 70 75

76 81 86 91

Val Leu Asn Leu Ser Lys Asn Gly Ile Glu Phe Ile Asp Glu His Ala

92	97	102	107	
ttc aaa gga gta gct	gaa acc ttg cag act	ctg gac ttg tcc gac aat		867
Phe Lys Gly Val Ala	Glu Thr Leu Gln Thr	Leu Asp Leu Ser Asp Asn		
108	113	118	123	
cgg att caa agt gtg	cac aaa aat gcc ttc	aat aac ctg aag gcc agg		915
Arg Ile Gln Ser Val	His Lys Asn Ala Phe	Asn Asn Leu Lys Ala Arg		
124	129	134	139	
gcc aga att gcc aac	aac ccc tgg cac tgc	gac tgt act cta cag caa		963
Ala Arg Ile Ala Asn	Asn Pro Trp His Cys	Asp Cys Thr Leu Gln Gln		
140	145	150	155	
gtt ctg agg agc atg	gcg tcc aat cat gag	aca gcc cac aac gtg atc		1011
Val Leu Arg Ser Met	Ala Ser Asn His Glu	Thr Ala His Asn Val Ile		
156	161	166	171	
tgt aaa acg tcc gtg	ttg gat gaa cat gct	ggc aga cca ttc ctc aat		1059
Cys Lys Thr Ser Val	Leu Asp Glu His Ala	Gly Arg Pro Phe Leu Asn		
172	177	182	187	
gct gcc aac gac gct	gac ctt tgt aac ctc	cct aaa aaa act acc gat		1107
Ala Ala Asn Asp Ala	Asp Leu Cys Asn Leu	Pro Lys Lys Thr Thr Asp		
188	193	198	203	
tat gcc atg ctg gtc	acc atg ttt ggc tgg	ttc act atg gtg atc tca		1155
Tyr Ala Met Leu Val	Thr Met Phe Gly Trp	Phe Thr Met Val Ile Ser		
204	209	214	219	
tat gtg gta tat tat	gtg agg caa aat cag	gag gat gcc cgg aga cac		1203
Tyr Val Val Tyr Tyr	Val Arg Gln Asn Gln	Glu Asp Ala Arg Arg His		
220	225	230	235	
ctc gaa tac ttg aaa	tcc ctg cca agc agg	cag aag aaa gca gat gaa		1251
Leu Glu Tyr Leu Lys	Ser Leu Pro Ser Arg	Gln Lys Lys Ala Asp Glu		
236	241	246	251	
cct gat gat att agc	act gtg gta tag tgtcc	aaactgactg tcattgagaa		1303
Pro Asp Asp Ile Ser	Thr Val Val *			
252	257			
agaaagaaag tagtttgcga	ttgcagtaga aataagtgg	ttactttctcc catccattgt		1363
aaacatttga aactttgtat	ttcagtttct tttgaattat	gccactgctg aacttttaac		1423
aaacactaca acataaataa	tttgagttaa ggtgatccac	cccttaattg taccctcgat		1483
ggatatatttc tgagtaagct	actatctgaa cattagttag	atccatctca ctatttaata		1543
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aaaaaaa				1610

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 <213> Homo sapiens

<220>
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<400> 755

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Met Val His Cys Ser Cys Val Leu Phe Arg Lys Tyr Gly Asn Phe Ile	
1 5 10 15	
gat aag cta aga ctc ttc acc agg gga gga tcc ggt gga atg ggt tat	153
Asp Lys Leu Arg Leu Phe Thr Arg Gly Gly Ser Gly Gly Met Gly Tyr	
17 22 27 32	
cct cgt tta ggt gga gaa ggt gga aaa ggt ggt gat gtc tgg gtt gta	201
Pro Arg Leu Gly Gly Glu Gly Gly Lys Gly Gly Asp Val Trp Val Val	
33 38 43 48	
gcc cac aac aga atg act tta aaa caa ctt aaa gac agg tat cct cgg	249
Ala His Asn Arg Met Thr Leu Lys Gln Leu Lys Asp Arg Tyr Pro Arg	
49 54 59 64	
aaa cgg ttt gtg gct gga gta gga gca aac agc aaa att agt gca ctg	297
Lys Arg Phe Val Ala Gly Val Gly Ala Asn Ser Lys Ile Ser Ala Leu	
65 70 75 80	
aaa ggc tcc aaa gga aaa gac tgg gaa atc cct gtg cct gtg ggt att	345
Lys Gly Ser Lys Gly Lys Asp Trp Glu Ile Pro Val Pro Val Gly Ile	
81 86 91 96	
tca gta act gat gaa aat ggt aaa att ata gga gaa ctc aat aaa gaa	393
Ser Val Thr Asp Glu Asn Gly Lys Ile Ile Gly Glu Leu Asn Lys Glu	
97 102 107 112	
aat gac aga att ttg gta gct caa gga ggt ctt ggt ggt aaa tta ctt	441
Asn Asp Arg Ile Leu Val Ala Gln Gly Gly Leu Gly Gly Lys Leu Leu	
113 118 123 128	
aca aat ttc tta cca ttg aaa ggc cag aaa cga ata att cac ctt gat	489
Thr Asn Phe Leu Pro Leu Lys Gly Gln Lys Arg Ile Ile His Leu Asp	
129 134 139 144	
cta aaa ctt ata gct gat gta ggc cta gta gga ttc cca aat gct gga	537
Leu Lys Leu Ile Ala Asp Val Gly Leu Val Gly Phe Pro Asn Ala Gly	
145 150 155 160	
aaa tcc tct ttg cta agt tgt gtt tct cat gca aaa cct gca att gca	585
Lys Ser Ser Leu Leu Ser Cys Val Ser His Ala Lys Pro Ala Ile Ala	
161 166 171 176	
gat tac gca ttt aca aca tta aag cct gaa ctt gga aag ata atg tac	633
Asp Tyr Ala Phe Thr Thr Leu Lys Pro Glu Leu Gly Lys Ile Met Tyr	

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 <213> Homo sapiens

<220>
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 <222> (39)..(740)

<400> 756

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                                           Met Glu Gly Gly Gly
                                           ↓1

ggt ata ccc cta gaa aca ctt aaa gaa gaa agt cag tca aga cat gtt      101
Gly Ile Pro Leu Glu Thr Leu Lys Glu Glu Ser Gln Ser Arg His Val
   6                               11                               16                               21

cta cct gca agt ttt gaa gtc aac agt ttg cag aaa agc aac tgg ggg      149
Leu Pro Ala Ser Phe Glu Val Asn Ser Leu Gln Lys Ser Asn Trp Gly
  22                               27                               32                               37

ttc tta ctt act ggg ctt gtg ggt ggc acc ctg gtg gct gtg tac gct      197
Phe Leu Leu Thr Gly Leu Val Gly Gly Thr Leu Val Ala Val Tyr Ala
  38                               43                               48                               53

gta gcc acg ccg ttt gta acg cca gcc ctt cga aaa gtc tgt ttg cca      245
Val Ala Thr Pro Phe Val Thr Pro Ala Leu Arg Lys Val Cys Leu Pro
  54                               59                               64                               69

ttt gta cct gca act atg aag cag att gaa aat gtt gtg aaa atg ttg      293
Phe Val Pro Ala Thr Met Lys Gln Ile Glu Asn Val Val Lys Met Leu
  70                               75                               80                               85

cga tgc cga aga gga tcc ctt gtg gac atc ggt agt ggg gac gga cgc      341
Arg Cys Arg Arg Gly Ser Leu Val Asp Ile Gly Ser Gly Asp Gly Arg
  86                               91                               96                               101

att gtc ata gcg gct gcg aag aaa ggg ttc aca gca gtt ggt tat gaa      389
Ile Val Ile Ala Ala Ala Lys Lys Gly Phe Thr Ala Val Gly Tyr Glu
 102                               107                               112                               117

tta aac cca tgg cta gtt tgg tat tcc aga tac cgc gct tgg cga gaa      437
Leu Asn Pro Trp Leu Val Trp Tyr Ser Arg Tyr Arg Ala Trp Arg Glu
 118                               123                               128                               133

ggt gtg cat gga tct gcc aaa ttt tat att tca gat ttg tgg aag gtt      485
Gly Val His Gly Ser Ala Lys Phe Tyr Ile Ser Asp Leu Trp Lys Val
 134                               139                               144                               149

act ttt tcg cag tac tcg aac gtt gtt att ttc ggt gtg cct cag atg      533
Thr Phe Ser Gln Tyr Ser Asn Val Val Ile Phe Gly Val Pro Gln Met
 150                               155                               160                               165

atg ctg cag ttg gag aag aaa ctt gaa cgt gaa ctt gag gat gat gca      581
Met Leu Gln Leu Glu Lys Lys Leu Glu Arg Glu Leu Glu Asp Asp Ala

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166	171	176	181	
cga gtt att gct tgc	egg ttc cct ttc cca cat	tgg act cca gac cac		629
Arg Val Ile Ala Cys	Arg Phe Pro Phe Pro His	Trp Thr Pro Asp His		
182	187	192	197	
gtc acg ggg gag ggg	ata gac aca gtg tgg gca	tat gat gca agc act		677
Val Thr Gly Glu Gly	Ile Asp Thr Val Trp Ala	Tyr Asp Ala Ser Thr		
198	203	208	213	
ttt aga ggc cgt gaa	aag agg ccc tgt aca	tcg atg cat ttc cag ctg		725
Phe Arg Gly Arg Glu	Lys Arg Pro Cys Thr	Ser Met His Phe Gln Leu		
214	219	224	229	
ccc att caa gca taa	actttactgg gagtgttttt	ctgaaatatt gtagtcttcc		780
Pro Ile Gln Ala *				
230				
ctgatcttgt agagacttac	agctgtgtcc ttagcaaagg	agcataattg tctttggttt		840
ggaatgagaa attactatta	ctttccttaa ctgttgagaa	aaacaaacga agaaaaacag		900
gtagatttaa aatctgcttt	tgatgctatt ttcttaaaaa	ttgtacttac tgcctttcca		960
tgcacctgga tgcataaaaa	gatgaataag tgatgggtcat	ggttatgggt agggaaaataa		1020
gatgccaaata gctcttcaca	ttataaacia tatggcttaa	tgcctcgata aggagaaatg		1080
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agaggcggtt atatTTTata	acatttatta gaaataattt	gttccaccac tagattactg		1260
tattttatgg aatctaagct	gtatatgtgt acatttgtat	acatgtatgt gtaaatgtaa		1320
gcctgacgtg gggttcagatt	ccagttttgt catcagcaag	aggcctcgga cccatgactt		1380
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tttgttattt tagacactga	gaaaaatctt attcacagaa	gttgcagatt atttctgcta		1560
gtcacttttt tatttcttga	gagctgccac tcatttaata	tttctcattt atgagaagag		1620
acttgactga tttagataaa	agacgaatta agggaaaacct	ttgaacgtga gtagacaagc		1680
ttcatatata tgtaaagtga	atattgaatg gtagcttgag	tcattcgtac ttatcacaga		1740
aaagaattga actcccagtc	atacacctgt aactgaaata	ccaaactgtc ttaatggaga		1800
tgtaatgaag taagttggtc	acatctttta ctaaacttat	aaaaattgga aaaaaaaaaa		1860
a				1861

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 gggtcgaccc acgcgtccgg ctctgagcgt ggctcgtggg ttttcgtga agtcgcggtg 120
 cagcggtaggg cggc atg tct gtg gcc ggt ggg gag att cgt ggg gac acg 170
 Met Ser Val Ala Gly Gly Glu Ile Arg Gly Asp Thr
 1 5 10
 ggg gga gag gac act gct gct ccc ggc cgg ttc agc ttc agc ccg gag 218
 Gly Gly Glu Asp Thr Ala Ala Pro Gly Arg Phe Ser Phe Ser Pro Glu
 13 18 23 28
 ccc acg ctc gag gac atc cgc cgc ctc cat gct gag ttt gct gcg gaa 266
 Pro Thr Leu Glu Asp Ile Arg Arg Leu His Ala Glu Phe Ala Ala Glu
 29 34 39 44
 cga gac tgg gaa cag ttc cat cag cct cgg aat ctc ctc ctg gcc ttg 314
 Arg Asp Trp Glu Gln Phe His Gln Pro Arg Asn Leu Leu Leu Ala Leu
 45 50 55 60
 gtt ggg gaa gtg ggg gag ctg gca gaa ctc ttt cag tgg aaa acc gat 362
 Val Gly Glu Val Gly Glu Leu Ala Glu Leu Phe Gln Trp Lys Thr Asp
 61 66 71 76
 ggg gaa cct ggc ccc caa ggc tgg tcc ccc agg gaa cgg gca gcc ctt 410
 Gly Glu Pro Gly Pro Gln Gly Trp Ser Pro Arg Glu Arg Ala Ala Leu
 77 82 87 92
 caa gag gag ctt agt gac gtc ctc atc tac ctg gtg gca tta gca gcc 458
 Gln Glu Glu Leu Ser Asp Val Leu Ile Tyr Leu Val Ala Leu Ala Ala
 93 98 103 108
 cgc tgc cgt gtg gat ctg ccg cta gca gtg ctc tcc aaa atg gac atc 506
 Arg Cys Arg Val Asp Leu Pro Leu Ala Val Leu Ser Lys Met Asp Ile
 109 114 119 124
 aac cgg cga cgc tac cca gcc cat ctg gcc cgc agc tct tcc cgc aag 554
 Asn Arg Arg Arg Tyr Pro Ala His Leu Ala Arg Ser Ser Ser Arg Lys
 125 130 135 140

31	36	41	46	
ctc ttc atg gca gca gag atc gtt aca gac att ttt atc tcc tgg ttc				372
Leu Phe Met Ala Ala Glu Ile Val Thr Asp Ile Phe Ile Ser Trp Phe				
47	52	57	62	
cct ttc tac tat gag atc aag atg gcc ttc gtg ctg tgg ctg ctc tca				420
Pro Phe Tyr Tyr Glu Ile Lys Met Ala Phe Val Leu Trp Leu Leu Ser				
63	68	73	78	
ccc tac acc aag ggc gcc agc ctg ctt tac cgc aag ttt gtc cac ccg				468
Pro Tyr Thr Lys Gly Ala Ser Leu Leu Tyr Arg Lys Phe Val His Pro				
79	84	89	94	
tcc ctg tcc cgc cat gag aag gag atc gac gcg tac atc gtg cag gcc				516
Ser Leu Ser Arg His Glu Lys Glu Ile Asp Ala Tyr Ile Val Gln Ala				
95	100	105	110	
aag gag cgc agc tac gag acc gtg ctc agc ttc ggg aag cgg ggc ctc				564
Lys Glu Arg Ser Tyr Glu Thr Val Leu Ser Phe Gly Lys Arg Gly Leu				
111	116	121	126	
aac att gcc gcc tcc gct gct gtg cag gct gcc acc aag agt cag ggg				612
Asn Ile Ala Ala Ser Ala Ala Val Gln Ala Ala Thr Lys Ser Gln Gly				
127	132	137	142	
gcg ctg gcc ggc agg ctg cgg agc ttc tcc atg cag gac ctg cgc tcc				660
Ala Leu Ala Gly Arg Leu Arg Ser Phe Ser Met Gln Asp Leu Arg Ser				
143	148	153	158	
atc tct gac gca cct gcc cct gcc tac cat gac ccc ctc tac ctg gag				708
Ile Ser Asp Ala Pro Ala Pro Ala Tyr His Asp Pro Leu Tyr Leu Glu				
159	164	169	174	
gac cag gtg tcc cac cgg agg cca ccc att ggg tac cgg gcc ggg ggc				756
Asp Gln Val Ser His Arg Arg Pro Pro Ile Gly Tyr Arg Ala Gly Gly				
175	180	185	190	
ctg cag gac agc gac acc gag gat gag tgt tgg tca gat act gag gca				804
Leu Gln Asp Ser Asp Thr Glu Asp Glu Cys Trp Ser Asp Thr Glu Ala				
191	196	201	206	
gtc ccc cgg gcg cca gcc cgg ccc cga gag aag ccc cta atc cgc agc				852
Val Pro Arg Ala Pro Ala Arg Pro Arg Glu Lys Pro Leu Ile Arg Ser				
207	212	217	222	
cag agc ctg cgt gtg gtc aag agg aag cca cgg gtg cgg gag ggc acc				900
Gln Ser Leu Arg Val Val Lys Arg Lys Pro Pro Val Arg Glu Gly Thr				
223	228	233	238	
tcg cgc tcc ctg aag gtt cgg acg agg aaa aag act gtg ccc tca gac				948
Ser Arg Ser Leu Lys Val Arg Thr Arg Lys Lys Thr Val Pro Ser Asp				
239	244	249	254	
gtg gac agc tag ggt ctgctgcac tgcccccttc ttacctcgtg ccctgcaggg				1003
Val Asp Ser *				
255				

ctccagggct atttggaggg accttgggct gcacatctgg cctgcctgca ccagctgct 1063
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 gccaggacca tcagcacgtg cccatcgaca tccagaccag caagctgctc gattggctgg 300
 tggacagaag gcactgcagc ctgaaatggc agagtctggt gctgacgac cgcgagaaga 360
 tcaatgctgc catccaggac atg cca gag agc gaa gag atc gcc cag ctg 410
 Met Pro Glu Ser Glu Glu Ile Ala Gln Leu
 1 5
 ctg tct ggg tcc tac att cac tac ttt cac tgc cta aga atc ctg gac 458
 Leu Ser Gly Ser Tyr Ile His Tyr Phe His Cys Leu Arg Ile Leu Asp
 11 16 21 26
 ctt ctc aaa ggc aca gag gcc tcc acg aag aat att ttt gtc cga tac 506
 Leu Leu Lys Gly Thr Glu Ala Ser Thr Lys Asn Ile Phe Val Arg Tyr
 27 32 37 42
 tct tca cag cgg atg aag gat tgg cag gag att ata gct ctg tat gag 554
 Ser Ser Gln Arg Met Lys Asp Trp Gln Glu Ile Ile Ala Leu Tyr Glu
 43 48 53 58

gct cca gaa ggt gtt gcc agg ggc cca gat gcc ctg aca ctg ctt gaa	1274
Ala Pro Glu Gly Val Ala Arg Gly Pro Asp Ala Leu Thr Leu Leu Glu	
283 288 293 298	
tac act gag acc cgg aat cag ttc ctt gat gag ctc atg gag ctt gag	1322
Tyr Thr Glu Thr Arg Asn Gln Phe Leu Asp Glu Leu Met Glu Leu Glu	
299 304 309 314	
atc ttc tta gcc cag aga gca gtg gag ttg agt gag gag gca gat gtc	1370
Ile Phe Leu Ala Gln Arg Ala Val Glu Leu Ser Glu Glu Ala Asp Val	
315 320 325 330	
ctg tct gtg agc cag ttc cag ctg gct cca gcc atc ctg cag ggc cag	1418
Leu Ser Val Ser Gln Phe Gln Leu Ala Pro Ala Ile Leu Gln Gly Gln	
331 336 341 346	
acc aaa gag aag atg gtt acc atg gtg tca gtg ctg gag gat ctg att	1466
Thr Lys Glu Lys Met Val Thr Met Val Ser Val Leu Glu Asp Leu Ile	
347 352 357 362	
ggc aag ctt acc agt ctt cag ctg caa cac ctg ttt atg atc ctg gcc	1514
Gly Lys Leu Thr Ser Leu Gln Leu Gln His Leu Phe Met Ile Leu Ala	
363 368 373 378	
tca cca agg tat gtg gac cga gtg act gaa ttc ctc cag caa aag ctg	1562
Ser Pro Arg Tyr Val Asp Arg Val Thr Glu Phe Leu Gln Gln Lys Leu	
379 384 389 394	
aag cag tcc cag ctg ctg gct ttg aag aaa gag ctg atg gtg cag aag	1610
Lys Gln Ser Gln Leu Leu Ala Leu Lys Lys Glu Leu Met Val Gln Lys	
395 400 405 410	
cag cag gag gca ctt gag gag cag gcg gct ctg gag cct aag ctg gac	1658
Gln Gln Glu Ala Leu Glu Glu Gln Ala Ala Leu Glu Pro Lys Leu Asp	
411 416 421 426	
ctg cta ctg gag aag acc aag gag ctg cag aag ctg att gaa gct gac	1706
Leu Leu Leu Glu Lys Thr Lys Glu Leu Gln Lys Leu Ile Glu Ala Asp	
427 432 437 442	
atc tcc aag agg tac agc ggg cgc cct gtg aac ctg atg gga acc tct	1754
Ile Ser Lys Arg Tyr Ser Gly Arg Pro Val Asn Leu Met Gly Thr Ser	
443 448 453 458	
ctg tga caccctccgt gttcttgccct gcccatcttc tccgcttttg ggatgaagat	1810
Leu *	
459	
gatagccagg gctgttgttt tggggccctt caaggcaaaa gaccaggctg actggaagat	1870
ggaaagccac aggaaggaag cggcacctga tggatgattt ggcaactctcc atgttctcta	1930
caagaagctg tggatgattgg ccctgtggtc taccaggcga aaaccacaga ttctccttct	1990
agttagtata gcggacttaa taaaagagga aaaaactctt aaaaaaaaaa aaaaa	2045

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 <212> DNA
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 <222> (370)..(2139)

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 tccagaatga ttgcttagga accctcaagc tggactgcag cgctcgggg acccctggcc 180
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 agaatcaagg tgtttgccaa tgggaccctg gtggtgaaat cagtgaacga caaagatgcc 300
 ggagattacc tgtgcgtagc tcgaaataag gttggtgatg actacgtggt gctcaaagtg 360
 gatgtggtg atg aaa ccg gcc aag att gag cac aag gag gag aac gac 408
 Met Lys Pro Ala Lys Ile Glu His Lys Glu Glu Asn Asp
 1 5 10

 cac aaa gtc ttc tac ggg ggt gac ctg aaa gtg gac tgt gtg gcc acc 456
 His Lys Val Phe Tyr Gly Gly Asp Leu Lys Val Asp Cys Val Ala Thr
 14 19 24 29

 ggg ctt ccc aat ccc gag atc tcc tgg agc ctc cca gac ggg agt ctg 504
 Gly Leu Pro Asn Pro Glu Ile Ser Trp Ser Leu Pro Asp Gly Ser Leu
 30 35 40 45

 gtg aac tcc ttc atg cag tgc gat gac agc ggt gga cgc acc aag cgc 552
 Val Asn Ser Phe Met Gln Ser Asp Asp Ser Gly Gly Arg Thr Lys Arg
 46 51 56 61

 tat gtc gtc ttc aac aat ggg aca ctc tac ttt aac gaa gtg ggg atg 600
 Tyr Val Val Phe Asn Asn Gly Thr Leu Tyr Phe Asn Glu Val Gly Met
 62 67 72 77

 agg gag gaa gga gac tac acc tgc ttt gct gaa aat cag gtc ggg aag 648
 Arg Glu Glu Gly Asp Tyr Thr Cys Phe Ala Glu Asn Gln Val Gly Lys
 78 83 88 93

 gac gag atg aga gtc aga gtc aag gtg gtg aca gcg ccc gcc acc atc 696
 Asp Glu Met Arg Val Arg Val Lys Val Val Thr Ala Pro Ala Thr Ile
 94 99 104 109

 cgg aac aag act tgc ttg gcg gtt cag gtg ccc tat gga gac gtg gtc 744
 Arg Asn Lys Thr Cys Leu Ala Val Gln Val Pro Tyr Gly Asp Val Val
 110 115 120 125

 act gta gcc tgt gag gcc aaa gga gaa ccc atg ccc aag gtg act tgg 792

Thr Val Ala Cys Glu Ala Lys Gly Glu Pro Met Pro Lys Val Thr Trp	
126 131 136 141	
ttg tcc cca acc aac aag gtg atc ccc acc tcc tct gag aag tat cag	840
Leu Ser Pro Thr Asn Lys Val Ile Pro Thr Ser Ser Glu Lys Tyr Gln	
142 147 152 157	
ata tac caa gat ggc act ctc ctt att cag aaa gcc cag cgt tct gac	888
Ile Tyr Gln Asp Gly Thr Leu Leu Ile Gln Lys Ala Gln Arg Ser Asp	
158 163 168 173	
agc ggc aac tac acc tgc ttg gtc agg aac agc gcg gga gag gat agg	936
Ser Gly Asn Tyr Thr Cys Leu Val Arg Asn Ser Ala Gly Glu Asp Arg	
174 179 184 189	
aag acg gtg tgg att cac gtc aac gtc cag cca ccc aag atc aac ggt	984
Lys Thr Val Trp Ile His Val Asn Val Gln Pro Pro Lys Ile Asn Gly	
190 195 200 205	
aac ccc aac ccc atc acc act gtg cgg gag ata gca gcc ggg ggc agt	1032
Asn Pro Asn Pro Ile Thr Thr Val Arg Glu Ile Ala Ala Gly Gly Ser	
206 211 216 221	
cgg aaa ctg att gac tgc aaa gct gaa ggc atc ccc acc ccg agg gtg	1080
Arg Lys Leu Ile Asp Cys Lys Ala Glu Gly Ile Pro Thr Pro Arg Val	
222 227 232 237	
tta tgg gct ttt ccc gag ggt gtg gtt ctg cca gct cca tac tat gga	1128
Leu Trp Ala Phe Pro Glu Gly Val Val Leu Pro Ala Pro Tyr Tyr Gly	
238 243 248 253	
aac cgg atc act gtc cat ggc aac ggt tcc ctg gac atc agg agt ttg	1176
Asn Arg Ile Thr Val His Gly Asn Gly Ser Leu Asp Ile Arg Ser Leu	
254 259 264 269	
agg aag agc gac tcc gtc cag ctg gta tgc atg gca cgc aac gag gga	1224
Arg Lys Ser Asp Ser Val Gln Leu Val Cys Met Ala Arg Asn Glu Gly	
270 275 280 285	
ggg gag gcc agg ttg atc ctg cag ctc act gtc ctg gag ccc atg gag	1272
Gly Glu Ala Arg Leu Ile Leu Gln Leu Thr Val Leu Glu Pro Met Glu	
286 291 296 301	
aaa ccc atc ttc cac gac ccg atc agc gag aag atc acg gcc atg gcg	1320
Lys Pro Ile Phe His Asp Pro Ile Ser Glu Lys Ile Thr Ala Met Ala	
302 307 312 317	
ggc cac acc atc agc ctc aac tgc tct gcc gcg ggg acc ccg aca ccc	1368
Gly His Thr Ile Ser Leu Asn Cys Ser Ala Ala Gly Thr Pro Thr Pro	
318 323 328 333	
agc ctg gtg tgg gtc ctt ccc aat ggc acc gat ctg cag agt gga cag	1416
Ser Leu Val Trp Val Leu Pro Asn Gly Thr Asp Leu Gln Ser Gly Gln	
334 339 344 349	
cag ctg cag cgc ttc tac cac aag gct gac ggc atg cta cac att agc	1464
Gln Leu Gln Arg Phe Tyr His Lys Ala Asp Gly Met Leu His Ile Ser	

350	355	360	365	
ggt ctc tcc tcg gtg gac gct ggg gcc tac cgc tgc gtg gcc cgc aat				1512
Gly Leu Ser Ser Val Asp Ala Gly Ala Tyr Arg Cys Val Ala Arg Asn				
366	371	376	381	
gcc gct ggc cac acg gag agg ctg gtc tcc ctg aag gtg gga ctg aag				1560
Ala Ala Gly His Thr Glu Arg Leu Val Ser Leu Lys Val Gly Leu Lys				
382	387	392	397	
cca gaa gca aac aag cag tat cat aac ctg gtc agc atc atc aat ggt				1608
Pro Glu Ala Asn Lys Gln Tyr His Asn Leu Val Ser Ile Ile Asn Gly				
398	403	408	413	
gag acc ctg aag ctc ccc tgc acc cct ccc ggg gct ggg cag gga cgt				1656
Glu Thr Leu Lys Leu Pro Cys Thr Pro Pro Gly Ala Gly Gln Gly Arg				
414	419	424	429	
ttc tcc tgg acg ctc ccc aat ggc atg cat ctg gag ggc ccc caa acc				1704
Phe Ser Trp Thr Leu Pro Asn Gly Met His Leu Glu Gly Pro Gln Thr				
430	435	440	445	
ctg gga cgc gtt tct ctt ctg gac aat ggc acc ctc acg gtt cgt gag				1752
Leu Gly Arg Val Ser Leu Leu Asp Asn Gly Thr Leu Thr Val Arg Glu				
446	451	456	461	
gcc tcg gtg ttt gac agg ggt acc tat gta tgc agg atg gag acg gag				1800
Ala Ser Val Phe Asp Arg Gly Thr Tyr Val Cys Arg Met Glu Thr Glu				
462	467	472	477	
tac ggc cct tcg gtc acc agc atc ccc gtg att gtg atc gcc tat cct				1848
Tyr Gly Pro Ser Val Thr Ser Ile Pro Val Ile Val Ile Ala Tyr Pro				
478	483	488	493	
ccc cgg atc acc agc gag ccc acc ccg gtc atc tac acc cgg ccc ggg				1896
Pro Arg Ile Thr Ser Glu Pro Thr Pro Val Ile Tyr Thr Arg Pro Gly				
494	499	504	509	
aac acc gtg aaa ctg aac tgc atg gct atg ggg att ccc aaa gct gac				1944
Asn Thr Val Lys Leu Asn Cys Met Ala Met Gly Ile Pro Lys Ala Asp				
510	515	520	525	
atc acg tgg gag tta ccg gat aag tcg cat ctg aag gca ggg gtt cag				1992
Ile Thr Trp Glu Leu Pro Asp Lys Ser His Leu Lys Ala Gly Val Gln				
526	531	536	541	
gct cgt ctg tat gga aac aga ttt ctt cac ccc cag gga tca ctg acc				2040
Ala Arg Leu Tyr Gly Asn Arg Phe Leu His Pro Gln Gly Ser Leu Thr				
542	547	552	557	
atc cag cat gcc aca cag aga gat gcc ggc ttc tac aag tgc atg gca				2088
Ile Gln His Ala Thr Gln Arg Asp Ala Gly Phe Tyr Lys Cys Met Ala				
558	563	568	573	
aaa aac att ctc ggc agt gac tcc aaa aca act tac atc cac gtc ttc				2136
Lys Asn Ile Leu Gly Ser Asp Ser Lys Thr Thr Tyr Ile His Val Phe				
574	579	584	589	

<213> Homo sapiens

<220>

<221> CDS

<222> (234)..(1445)

<400> 761

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attgatagcc gtacgcctga ggtaccggac cggaattccc gggtcgacga tttcgtccgc      60
gggaggcagt ggtagaggga ggtggcggca gcggctagcg gactcgagtc tcaaccgggc      120
tgaggcggac acttctgtgg agcgaagcag tgggagcatc gagcactaga ggcgacaccg      180
ggatccccgg ctccggggag gggggcgccg gaccgggagg aggggagggg gcg      atg      236
                                     Met
                                     1

ctg gaa gcc atg gcg gag ccc agt ccc gaa gat cca cct ccg acc ctt      284
Leu Glu Ala Met Ala Glu Pro Ser Pro Glu Asp Pro Pro Pro Thr Leu
  2              7              12              17

aag cca gag act cag cca cca gag aaa cgg cgg aga aca att gag gat      332
Lys Pro Glu Thr Gln Pro Pro Glu Lys Arg Arg Arg Thr Ile Glu Asp
  18              23              28              33

ttc aac aaa ttc tgc agt ttt gtt ttg gca tat gct ggt tac att ccc      380
Phe Asn Lys Phe Cys Ser Phe Val Leu Ala Tyr Ala Gly Tyr Ile Pro
  34              39              44              49

cct agc aaa gag gaa agt gac tgg cca gcc tct ggc tcc agc tct cca      428
Pro Ser Lys Glu Glu Ser Asp Trp Pro Ala Ser Gly Ser Ser Ser Pro
  50              55              60              65

ttg cga gga gag agt gcg gcc gac agt gat ggc tgg gac tcg gcc ccc      476
Leu Arg Gly Glu Ser Ala Ala Asp Ser Asp Gly Trp Asp Ser Ala Pro
  66              71              76              81

tca gat ctt cga acc atc cag act ttt gtt aag aaa gca aag tca tcc      524
Ser Asp Leu Arg Thr Ile Gln Thr Phe Val Lys Lys Ala Lys Ser Ser
  82              87              92              97

aag aga agg gca gct caa gca ggt ccc acc cag cca gga ccc cca agg      572
Lys Arg Arg Ala Ala Gln Ala Gly Pro Thr Gln Pro Gly Pro Pro Arg
  98              103             108             113

tcc act ttc tct cgt ctg cag gcc ccc gac agt gct acc ttg ctt gag      620
Ser Thr Phe Ser Arg Leu Gln Ala Pro Asp Ser Ala Thr Leu Leu Glu
  114             119             124             129

aag atg aag ctc aag gac tct ctc ttt gat ctg gat ggg ccc aaa gtg      668
Lys Met Lys Leu Lys Asp Ser Leu Phe Asp Leu Asp Gly Pro Lys Val
  130             135             140             145

gca tct cct ttg tcc ccc aca tcc ctg aca cat acc tcc cgg ccc cct      716
Ala Ser Pro Leu Ser Pro Thr Ser Leu Thr His Thr Ser Arg Pro Pro
  146             151             156             161
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[illegible]

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<220>  
<221> CDS  
<222> (66) .. (605)
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gaa ggc gag aag cac agg gaa ctt agg ctg cgg aac tat gtc ccg gag	299
Glu Gly Glu Lys His Arg Glu Leu Arg Leu Arg Asn Tyr Val Pro Glu	
63 68 73 78	
gat gag gac ctg aag aag agg agg gtg ccc cag gcc aaa ccg gtt gca	347
Asp Glu Asp Leu Lys Lys Arg Arg Val Pro Gln Ala Lys Pro Val Ala	
79 84 89 94	
gtg gag gag aag gtg aag gag cag ctg gag gcc gcc aag ccc gag ccc	395
Val Glu Glu Lys Val Lys Glu Gln Leu Glu Ala Ala Lys Pro Glu Pro	
95 100 105 110	
gtc atc gag gag gtg gac ctg gcc aac ctc gct cct cgg aag cct gac	443
Val Ile Glu Glu Val Asp Leu Ala Asn Leu Ala Pro Arg Lys Pro Asp	
111 116 121 126	
tgg gac ctc aag aga gat gtg gcc aag aag ctg gag aaa cta aaa aag	491
Trp Asp Leu Lys Arg Asp Val Ala Lys Lys Leu Glu Lys Leu Lys Lys	
127 132 137 142	
cgg act cag agg gcc att gcc gag ctg atc cgt gaa agg ctg aaa ggc	539
Arg Thr Gln Arg Ala Ile Ala Glu Leu Ile Arg Glu Arg Leu Lys Gly	
143 148 153 158	
cag gaa gac agc cta gcc tct gca gtg gat gct gcc acc gaa caa aag	587
Gln Glu Asp Ser Leu Ala Ser Ala Val Asp Ala Ala Thr Glu Gln Lys	
159 164 169 174	
acc tgt gac tcc gac tga ggcatg cctgccccca ccactcgccc atcaggcctg	641
Thr Cys Asp Ser Asp *	
175 180	
tccctgcagag gatggtcttg ggcaggggatg ggggctaggc ttgccatcac ctccagtttg	701
gcttctgagc agagactccc tgcccatcaa gtctgaaacc cccatggatg aggtcagctc	761
cttgtctgct ggggtggcccc tgccattctg aatggaggca gaaccagcaa caactctggg	821
cgtgcctgtg totgcacatg tggatgtaca tatgtctgta tatatgtata tattttgaac	881
tttctaaaaa aaaatctgga aatagaaaca agtaaaccce tgtgtgtggc aaaaaaaaaa	941
a	942

<210> 763
 <211> 2372
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (128)..(1807)

ctg act gcc tgc atc cac ggg tct gcg gcg atg ctc tac ccc atg tac Leu Thr Ala Cys Ile His Gly Ser Ala Ala Met Leu Tyr Pro Met Tyr 207 212 217 222	793
tgg cag cac gtg tac atc ccc gtg ctg ccg ccg cat ctg ctg gac tac Trp Gln His Val Tyr Ile Pro Val Leu Pro Pro His Leu Leu Asp Tyr 223 228 233 238	841
tgc tgt gct ccc atg ccc tac ctc ata gga atc cat tta agt tta atg Cys Cys Ala Pro Met Pro Tyr Leu Ile Gly Ile His Leu Ser Leu Met 239 244 249 254	889
gag aaa gtc aga aac atg gcc ctg gat gat gtc gtg atc ctg aat gtg Glu Lys Val Arg Asn Met Ala Leu Asp Asp Val Val Ile Leu Asn Val 255 260 265 270	937
gac acc aac acc ctg gaa acc ccc ttc gat gac ctc cag agc ctc cca Asp Thr Asn Thr Leu Glu Thr Pro Phe Asp Asp Leu Gln Ser Leu Pro 271 276 281 286	985
aac gac gtg atc tct tcc ctg aag aac agg ctg aaa aag gtc tcc aca Asn Asp Val Ile Ser Ser Leu Lys Asn Arg Leu Lys Lys Val Ser Thr 287 292 297 302	1033
acc act ggg gat ggt gtg gcc aga gcg ttc ctc aag gcc cag gct gct Thr Thr Gly Asp Gly Val Ala Arg Ala Phe Leu Lys Ala Gln Ala Ala 303 308 313 318	1081
ttc ttc ggt agc tac cga aac gct ctg aaa atc gag ccg gag gag ccg Phe Phe Gly Ser Tyr Arg Asn Ala Leu Lys Ile Glu Pro Glu Glu Pro 319 324 329 334	1129
atc act ttc tgt gag gaa gcc ttc gtg tcc cac tac cgc tcc gga gcc Ile Thr Phe Cys Glu Glu Ala Phe Val Ser His Tyr Arg Ser Gly Ala 335 340 345 350	1177
atg agg cag ttc ctg cag aac gcc aca cag ctg cag ctc ttc aag cag Met Arg Gln Phe Leu Gln Asn Ala Thr Gln Leu Gln Leu Phe Lys Gln 351 356 361 366	1225
ttt att gat ggt cga tta gat ctt ctc aat tcc ggc gaa ggt ttc agt Phe Ile Asp Gly Arg Leu Asp Leu Leu Asn Ser Gly Glu Gly Phe Ser 367 372 377 382	1273
gat gtt ttt gaa gag gaa atc aac atg ggc gag tac gct ggc agt gac Asp Val Phe Glu Glu Glu Ile Asn Met Gly Glu Tyr Ala Gly Ser Asp 383 388 393 398	1321
aaa ctg tac cat cag tgg ctc tcc act gtc cgg aaa gga agt gga gca Lys Leu Tyr His Gln Trp Leu Ser Thr Val Arg Lys Gly Ser Gly Ala 399 404 409 414	1369
att ctg aat act gta aag acc aaa gca aat ccg gcc atg aag act gtc Ile Leu Asn Thr Val Lys Thr Lys Ala Asn Pro Ala Met Lys Thr Val 415 / 420 425 430	1417
tac aag ttc gca aaa gat cat gca aaa atg gga ata aaa gag gtg aaa	1465

<211> 1960
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (511)..(1311)

<220>
 <221> misc_feature
 <222> (1)...(1960)
 <223> n = a,t,c or g

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<400> 764
agagttgccca ggcttcnnnc tccaggntnt ctaatngata ctngaannnn ccnnngnagg      60

ggcaggactg gttgcagagg ccacagagat gaccacacca gggcattctg tagtgccagt      120

gcctggttcc acccgggggg catctgagaa ctgtgtcctt gcattcctga gtccagcact      180

tcccaggcca gccatcctaa tgagtgtgaa gtggtatttc actgtatttc cctaattggat      240

ctgtccacaa cttaggaact cacacagctt ttggcctgag ccccggttac caagagaaag      300

gagggttttg ccaaggactc caaggggagt gcacttgatg ctggtcggga cccaaagcgc      360

ccagccctcc ctgagacatt gtgtgagtcg ggctgggcct caaacacggc cccactacc      420

ccaccccagc cagggtggtg cttgtgtggg aaggacttta aatccagctg ccagaccct      480

ggacgggaga aggagagacg gctggccacc      atg cac ggc tcc tgc agt ttc      531
                                Met His Gly Ser Cys Ser Phe
                                1                                5

ctg atg ctt ctg ctg ccg cta ctg cta ctg ctg gtg gcc acc aca ggc      579
Leu Met Leu Leu Leu Pro Leu Leu Leu Leu Val Ala Thr Thr Gly
      8                                13                                18                                23

ccc gtt gga gcc ctc aca gat gag gag aaa cgt ttg atg gtg gag ctg      627
Pro Val Gly Ala Leu Thr Asp Glu Glu Lys Arg Leu Met Val Glu Leu
      24                                29                                34                                39

cac aac ctc tac cgg gcc cag gta tcc ccg acg gcc tca gac atg ctg      675
His Asn Leu Tyr Arg Ala Gln Val Ser Pro Thr Ala Ser Asp Met Leu
      40                                45                                50                                55

cac atg aga tgg gac gag gag ctg gcc gcc ttc gcc aag gcc tac gca      723
His Met Arg Trp Asp Glu Glu Leu Ala Ala Phe Ala Lys Ala Tyr Ala
      56                                61                                66                                71

cgg cag tgc gtg tgg ggc cac aac aag gag cgc ggg cgc cgc ggc gag      771
Arg Gln Cys Val Trp Gly His Asn Lys Glu Arg Gly Arg Arg Gly Glu
      72                                77                                82                                87

aat ctg ttc gcc atc aca gac gag ggc atg gac gtg ccg ctg gcc atg      819
Asn Leu Phe Ala Ile Thr Asp Glu Gly Met Asp Val Pro Leu Ala Met
      88                                93                                98                                103

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gag gag tgg cac cac gag cgt gag cac tac aac ctc agc gcc gcc acc	867
Glu Glu Trp His His Glu Arg Glu His Tyr Asn Leu Ser Ala Ala Thr	
104 109 114 119	
tgc agc cca ggc cag atg tgc ggc cac tac acg cag gtg gta tgg gcc	915
Cys Ser Pro Gly Gln Met Cys Gly His Tyr Thr Gln Val Val Trp Ala	
120 125 130 135	
aag aca gag agg atc ggc tgt ggt tcc cac ttc tgt gag aag ctc cag	963
Lys Thr Glu Arg Ile Gly Cys Gly Ser His Phe Cys Glu Lys Leu Gln	
136 141 146 151	
ggt gtt gag gag acc aac atc gaa tta ctg gtg tgc aac tat gag cct	1011
Gly Val Glu Glu Thr Asn Ile Glu Leu Leu Val Cys Asn Tyr Glu Pro	
152 157 162 167	
ccg ggg aac gtg aag ggg aaa cgg ccc tac cag gag ggg act ccg tgc	1059
Pro Gly Asn Val Lys Gly Lys Arg Pro Tyr Gln Glu Gly Thr Pro Cys	
168 173 178 183	
tcc caa tgt ccc tct ggc tac cac tgc aag aac tcc ctc tgt gaa ccc	1107
Ser Gln Cys Pro Ser Gly Tyr His Cys Lys Asn Ser Leu Cys Glu Pro	
184 189 194 199	
atc gga agc ccg gaa gat gct cag gat ttg cct tac ctg gta act gag	1155
Ile Gly Ser Pro Glu Asp Ala Gln Asp Leu Pro Tyr Leu Val Thr Glu	
200 205 210 215	
gcc cca tcc ttc cgg gcg act gaa gca tca gac tct agg aaa atg gtt	1203
Ala Pro Ser Phe Arg Ala Thr Glu Ala Ser Asp Ser Arg Lys Met Val	
216 221 226 231	
ttt cca gcc cag gac aag cca ggt gag ctg cag gcc aca ctg gac cac	1251
Phe Pro Ala Gln Asp Lys Pro Gly Glu Leu Gln Ala Thr Leu Asp His	
232 237 242 247	
acg ggg cac acc tcc tcc aag tcc ctg ccc aat ttc ccc ata tac ctc	1299
Thr Gly His Thr Ser Ser Lys Ser Leu Pro Asn Phe Pro Ile Tyr Leu	
248 253 258 263	
tgc cac cgc taa tgc cacgggtggg cgtgccttgg ctctgcagtc gtccttgcca	1354
Cys His Arg *	
264	
ggtgcagagg gccctgacaa gcctagcgtc gtgtcagggc tgaactcggg ccctgggtcat	1414
gtgtggggcc ctctcctggg actactgtc ctgcctcctc tgggtgttggc tggaatcttc	1474
tgaaggggat accactcaaa ggggtgaagag gtcagctgtc ctctgtcat cttccccacc	1534
ctgtccccag ccctaaaca agatacttct tgggttaaggc cctccggaag ggaaaggcta	1594
cggggcatgt gcctcatcac accatccatc ctggaggcac aaggcctggc tggctgcgag	1654
ctcaggaggc cgcctgagga ctgcacaccg ggcccacacc tctcctgccc ctcctcctg	1714

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agtcctgggg gtgggaggat ttgaggagc tcaactgccta cctggcctgg ggctgtctgc 1774
ccacacagca tgtgcgctct ccctgagtgc ctgtgtagct ggggatgggg attcctaggg 1834
gcagatgaag gacaagcccc actggagtgg gggtctttga gtggggggagg cagggacgag 1894
ggaaggaaag taactcctga ctctccaata aaaacctgtc caacctgtgg caactaaaaa 1954
aaaaaa 1960

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<210> 765
<211> 1890
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (132) .. (1844)

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<400> 765
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tccgatgata tggaaatatt catggaagaa ttaaagaatt agagaaggga aaggaagaaa 120
aagaaattaa a atg gag aaa aca gat gaa act agg tta cag aag gaa gca 170
          Met Glu Lys Thr Asp Glu Thr Arg Leu Gln Lys Glu Ala
            1              5              10
gaa ttt gaa aaa tcg gct aag gaa aat tta aga gat tct aag gaa ttg 218
Glu Phe Glu Lys Ser Ala Lys Glu Asn Leu Arg Asp Ser Lys Glu Leu
 14              19              24              29
aga aat ttt gag gca ttg caa ata gat gac ata atg gct ata aaa atg 266
Arg Asn Phe Glu Ala Leu Gln Ile Asp Asp Ile Met Ala Ile Lys Met
 30              35              40              45
gaa gat ccc aaa gaa att aga aag gaa gag tta gaa gaa gat cac aaa 314
Glu Asp Pro Lys Glu Ile Arg Lys Glu Glu Leu Glu Glu Asp His Lys
 46              51              56              61
tgt agt cat ttt cct gat ttt tct tat tct gcc agt agc aag ata ata 362
Cys Ser His Phe Pro Asp Phe Ser Tyr Ser Ala Ser Ser Lys Ile Ile
 62              67              72              77
att agt gat gtt ccc agt aga aag gat cat atg tgc cat cct cat gga 410
Ile Ser Asp Val Pro Ser Arg Lys Asp His Met Cys His Pro His Gly
 78              83              88              93
att atg atc att gag gat ccc gca gca tta aac aag cca gaa aag cta 458
Ile Met Ile Ile Glu Asp Pro Ala Ala Leu Asn Lys Pro Glu Lys Leu
 94              99              104              109
/
aaa aag aaa aag aag aaa agc aaa atg gat cga cat gga aat gat aaa 506
Lys Lys Lys Lys Lys Lys Ser Lys Met Asp Arg His Gly Asn Asp Lys

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110	115	120	125	
tcc aca ccc aag aag act tgc aaa aag agg cag tct tcg gaa tct gac				554
Ser Thr Pro Lys Lys Thr Cys Lys Lys Arg Gln Ser Ser Glu Ser Asp				
126	131	136	141	
att gag agc gtc ata tat acc att gaa gcc gtc gca aaa gga gac tgg				602
Ile Glu Ser Val Ile Tyr Thr Ile Glu Ala Val Ala Lys Gly Asp Trp				
142	147	152	157	
ggc ata gag aaa ctt gga gat acc cct cgc aag aag gtc cgc aca tcc				650
Gly Ile Glu Lys Leu Gly Asp Thr Pro Arg Lys Lys Val Arg Thr Ser				
158	163	168	173	
tca agt ggc aag gga agc att ttg gat gcc aag cca cca aag aaa aaa				698
Ser Ser Gly Lys Gly Ser Ile Leu Asp Ala Lys Pro Pro Lys Lys Lys				
174	179	184	189	
gtg aaa tca aga gag aag aaa atg tca aag gag aaa tcc tca gac acc				746
Val Lys Ser Arg Glu Lys Lys Met Ser Lys Glu Lys Ser Ser Asp Thr				
190	195	200	205	
acc aaa gag tca aga cct cca gat ttc att agt att tct gct agc aag				794
Thr Lys Glu Ser Arg Pro Pro Asp Phe Ile Ser Ile Ser Ala Ser Lys				
206	211	216	221	
aac att tct ggt gag aca cca gag ggt ata aaa gca gaa cca ttg acc				842
Asn Ile Ser Gly Glu Thr Pro Glu Gly Ile Lys Ala Glu Pro Leu Thr				
222	227	232	237	
cct atg gaa gat gca cta cca ccc agc cta tca gga cag gcc aag cct				890
Pro Met Glu Asp Ala Leu Pro Pro Ser Leu Ser Gly Gln Ala Lys Pro				
238	243	248	253	
gag gac agt gac tgt cac aga aaa ata gaa act tgt ggt tcc agg aaa				938
Glu Asp Ser Asp Cys His Arg Lys Ile Glu Thr Cys Gly Ser Arg Lys				
254	259	264	269	
tcc gag agg tct tgc aaa ggt gct ctt tat aaa acc ctg gtg tct gag				986
Ser Glu Arg Ser Cys Lys Gly Ala Leu Tyr Lys Thr Leu Val Ser Glu				
270	275	280	285	
ggc atg ctc acc tct ctg cga gct aat gtt gac aga gga aaa cga agc				1034
Gly Met Leu Thr Ser Leu Arg Ala Asn Val Asp Arg Gly Lys Arg Ser				
286	291	296	301	
tca gga aaa gga aac tcc tct gat cat gaa ggg tgt tgg aat gaa gaa				1082
Ser Gly Lys Gly Asn Ser Ser Asp His Glu Gly Cys Trp Asn Glu Glu				
302	307	312	317	
agc tgg aca ttt agt cag agt ggg acc agt ggg agc aag aag ttc aag				1130
Ser Trp Thr Phe Ser Gln Ser Gly Thr Ser Gly Ser Lys Lys Phe Lys				
318	323	328	333	
aag aca aag cca aaa gaa gac tgt ctc ctt ggc tcc gca aag ctg gat				1178
Lys Thr Lys Pro Lys Glu Asp Cys Leu Leu Gly Ser Ala Lys Leu Asp				
334	339	344	349	

gaa gaa ttt gaa aaa aaa ttc aac agc ctc cct caa tat agt cct gtt	1226
Glu Glu Phe Glu Lys Lys Phe Asn Ser Leu Pro Gln Tyr Ser Pro Val	
350 355 360 365	
aca ttt gac cgg aaa tgt gta cct gtc cca aga aaa aag aag aag act	1274
Thr Phe Asp Arg Lys Cys Val Pro Val Pro Arg Lys Lys Lys Lys Thr	
366 371 376 381	
gga aat gtg tcc tca gaa ccg act aaa acc agc aaa gga agt ggg gat	1322
Gly Asn Val Ser Ser Glu Pro Thr Lys Thr Ser Lys Gly Ser Gly Asp	
382 387 392 397	
aaa tgg tca aac aag caa ctc ttc ttg gat gcc att cac cct aca gaa	1370
Lys Trp Ser Asn Lys Gln Leu Phe Leu Asp Ala Ile His Pro Thr Glu	
398 403 408 413	
gcc ata ttt tca gaa gac aga aac acc atg gag cct gtt cat aag gtt	1418
Ala Ile Phe Ser Glu Asp Arg Asn Thr Met Glu Pro Val His Lys Val	
414 419 424 429	
aaa aat atc cca tcc att ttc aac act cca gag cca aca aca acg caa	1466
Lys Asn Ile Pro Ser Ile Phe Asn Thr Pro Glu Pro Thr Thr Thr Gln	
430 435 440 445	
gaa cct ttg gtg ggc agc caa aag aga aaa gca agg aaa acc aag att	1514
Glu Pro Leu Val Gly Ser Gln Lys Arg Lys Ala Arg Lys Thr Lys Ile	
446 451 456 461	
aca cac ctt gtc agg aca gca gat ggc cgg gta tca cca gca gga ggt	1562
Thr His Leu Val Arg Thr Ala Asp Gly Arg Val Ser Pro Ala Gly Gly	
462 467 472 477	
act ttg gat gac aaa cca aag gaa caa ctg cag agg agt ctc cct aaa	1610
Thr Leu Asp Asp Lys Pro Lys Glu Gln Leu Gln Arg Ser Leu Pro Lys	
478 483 488 493	
gca act gag aca gac tgc aat gac aaa tgc tca cac aac acc gag gtc	1658
Ala Thr Glu Thr Asp Cys Asn Asp Lys Cys Ser His Asn Thr Glu Val	
494 499 504 509	
ggg gag acg cgg agc agt act cca gaa atg cct gcc gtg tct gcg ttc	1706
Gly Glu Thr Arg Ser Ser Thr Pro Glu Met Pro Ala Val Ser Ala Phe	
510 515 520 525	
ttt agc ctc gct gcg ctg gct gaa gtg gca gcc atg gaa aat gtg cac	1754
Phe Ser Leu Ala Ala Leu Ala Glu Val Ala Ala Met Glu Asn Val His	
526 531 536 541	
aga ggt cag agg tca act ccg ctc acc cat gat gga cag cca aaa gaa	1802
Arg Gly Gln Arg Ser Thr Pro Leu Thr His Asp Gly Gln Pro Lys Glu	
542 547 552 557	
atg ccg cag gct cct gta ctt att tcc tgc gct gac cag tga agcgccc	1851
Met Pro Gln Ala Pro Val Leu Ile Ser Cys Ala Asp Gln *	
558 563 568	

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1890

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<213> Homo sapiens

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ctcatagaac tgatgagaag attaaattag ttaacatatg taa atg tat aaa gca 175
Met Tyr Lys Ala
1
ctt aga aca gtg cct ggc tct tcg gaa gtg ctg ctg tta tta gca cag 223
Leu Arg Thr Val Pro Gly Ser Ser Glu Val Leu Leu Leu Leu Ala Gln
5 10 15 20
cct tgg ctc cag cct tgc ccc cac ctg ccc act gcc tct ctg acc agt 271
Pro Trp Leu Gln Pro Cys Pro His Leu Pro Thr Ala Ser Leu Thr Ser
21 26 31 36
gac ctg acc ttc cct tgt gtc ccc tct gag gag cag tat gaa gag cgg 319
Asp Leu Thr Phe Pro Cys Val Pro Ser Glu Glu Gln Tyr Glu Glu Arg
37 42 47 52
ttt ctg cag gaa gaa acc gtg tcc cag cag atc aac tcc atc gaa ctt 367
Phe Leu Gln Glu Glu Thr Val Ser Gln Gln Ile Asn Ser Ile Glu Leu
53 58 63 68
ctg cag acg cga ccc ctg gct ctg cct gag gtg gtg aag tca cag cgg 415
Leu Gln Thr Arg Pro Leu Ala Leu Pro Glu Val Val Lys Ser Gln Arg
69 74 79 84
ccc ctg cag agg cag gtc cac ctg aga ggc cgg ccg gcc tcc cag ccc 463
Pro Leu Gln Arg Gln Val His Leu Arg Gly Arg Pro Ala Ser Gln Pro
85 90 95 100
act gtc atc cgg ggc atc acc tac tat aaa gcc aag gtc tct gaa gaa 511
Thr Val Ile Arg Gly Ile Thr Tyr Tyr Lys Ala Lys Val Ser Glu Glu
101 106 111 116
gag aat gac att gaa gag cag caa gat gag ttt ttc agc ggt gac aat 559
Glu Asn Asp Ile Glu Glu Gln Gln Asp Glu Phe Phe Ser Gly Asp Asn
117 122 127 132
gga gtg gat ttg ctg att gaa gat cag ctc ctg aga cac aac ggc ctg 607
Gly Val Asp Leu Leu Ile Glu Asp Gln Leu Leu Arg His Asn Gly Leu

133	138	143	148	
atg acc agt gtc acc	cgg agg cct gca gcc	acc cgt cag gga cac	agg	655
Met Thr Ser Val Thr	Arg Arg Pro Ala Ala	Thr Arg Gln Gly His	Ser	
149	154	159	164	
act gct gtg aca agc	gac ctg aac gct cgg	acc gca ccc tgg tcc	tca	703
Thr Ala Val Thr Ser	Asp Leu Asn Ala Arg	Thr Ala Pro Trp Ser	Ser	
165	170	175	180	
gca ctg cca cag ccc	tcg acc tca gat ccc	agg atc gcc aac cat	gcc	751
Ala Leu Pro Gln Pro	Ser Thr Ser Asp Pro	Ser Ile Ala Asn His	Ala	
181	186	191	196	
tca gtg gga cca aca	ctc caa aca acc tcg	gtg tct cca gat ccc	aca	799
Ser Val Gly Pro Thr	Leu Gln Thr Thr Ser	Val Ser Pro Asp Pro	Thr	
197	202	207	212	
agg gag tca gtc ctg	cag cct tct cct cag	gta cca gcc acc act	gtg	847
Arg Glu Ser Val Leu	Gln Pro Ser Pro Gln	Val Pro Ala Thr Thr	Val	
213	218	223	228	
gcc cac aca gcc acc	cag caa cca gca gcc	cca gct cct ccg gca	gtg	895
Ala His Thr Ala Thr	Gln Gln Pro Ala Ala	Pro Ala Pro Pro Ala	Val	
229	234	239	244	
tct ccc agg gag gca	ttg atg gaa gct atg	cac aca gtc cca gtg	cct	943
Ser Pro Arg Glu Ala	Leu Met Glu Ala Met	His Thr Val Pro Val	Pro	
245	250	255	260	
ccc acc aca gtc aga	aca gac tcg ctg ggg	aaa gat gct cct gct	ggg	991
Pro Thr Thr Val Arg	Thr Asp Ser Leu Gly	Lys Asp Ala Pro Ala	Gly	
261	266	271	276	
cgg gga aca acc cct	gcc agc ccc acg ctg	agg ccc gaa gaa gaa	gat	1039
Arg Gly Thr Thr Pro	Ala Ser Pro Thr Leu	Ser Pro Glu Glu Glu	Asp	
277	282	287	292	
gac atc cgg aat gtc	ata gga agg tgc aag	gac act ctc tcc aca	atc	1087
Asp Ile Arg Asn Val	Ile Gly Arg Cys Lys	Asp Thr Leu Ser Thr	Ile	
293	298	303	308	
acg ggg ccg acc acc	cag aac aca tat ggg	cgg aat gaa ggg gcc	tgg	1135
Thr Gly Pro Thr Thr	Gln Asn Thr Tyr Gly	Arg Asn Glu Gly Ala	Trp	
309	314	319	324	
atg aag gac ccc ctg	gcc aag gat gag cgg	att tac gta acc aac	tat	1183
Met Lys Asp Pro Leu	Ala Lys Asp Glu Arg	Ile Tyr Val Thr Asn	Tyr	
325	330	335	340	
tac tac ggc aac acc	ctg gta gag ttc cgg	aac ctg gag aac ttc	aaa	1231
Tyr Tyr Gly Asn Thr	Leu Val Glu Phe Arg	Asn Leu Glu Asn Phe	Lys	
341	346	351	356	
caa ggt cgc tgg agc	aat tcc tac aag ctc	ccg tac agc tgg atc	ggc	1279
Gln Gly Arg Trp Ser	Asn Ser Tyr Lys Leu	Pro Tyr Ser Trp Ile	Gly	
357	362	367	372	

ccttcaagcc ttcagccctt ccagctccaa gtctcagatc tgcaccattg aaaaggtttc 2158
 ttcattctggg tcttgcagga ggcaggcaac accaggagca gaaatgaaag aggcaagaaa 2218
 gaagtgttat gtggcgagaa aaaaagtttt aatgtatttg agaagtttta aaaaaccag 2278
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 <212> DNA
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 gccatggatg ctggagcact gcttgatgta ccccatcgac tgcgtg atg acc cgg 175
 Met Thr Arg
 1
 atg cat agt cta cag tct gac cca gct ggc cgc tat cgc aat gtg ttg 223
 Met His Ser Leu Gln Ser Asp Pro Ala Gly Arg Tyr Arg Asn Val Leu
 4 9 14 19
 gag gtc ctc tgg agg att ata aga acg gag ggc cta tgg agg ccc atg 271
 Glu Val Leu Trp Arg Ile Ile Arg Thr Glu Gly Leu Trp Arg Pro Met
 20 25 30 35
 agg ggg ctg aac gtc aca gca aca ggc gca tgg cct gcc cac gcc ctt 319
 Arg Gly Leu Asn Val Thr Ala Thr Gly Ala Trp Pro Ala His Ala Leu
 36 41 46 51
 tat ttt gcc tgc tac gaa aag tta aaa aag aca ttg agt gat gta atc 367
 Tyr Phe Ala Cys Tyr Glu Lys Leu Lys Lys Thr Leu Ser Asp Val Ile
 52 57 62 67
 cac cct ggg ggc aat agc cat att gcc aat ggt gcg gcc ggg tgt gtg 415
 His Pro Gly Gly Asn Ser His Ile Ala Asn Gly Ala Ala Gly Cys Val
 68 73 78 83
 gca aca tta ctt cat gat gca gcc atg aac cct gcg gaa gtg gtc aag 463
 Ala Thr Leu Leu His Asp Ala Ala Met Asn Pro Ala Glu Val Val Lys
 84 89 94 99
 cag agg atg cag atg tac aac tca cca tac cac cgg gtg aca gac tgt 511
 Gln Arg Met Gln Met Tyr Asn Ser Pro Tyr His Arg Val Thr Asp Cys
 100 105 110 115

<212> DNA
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 <222> (164) .. (1594)

<400> 768

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cgcgcccccg ctctgcagg ctgtttttct tcaaataaag aac  atg gtg aaa ctg      175
                                     Met Val Lys Leu
                                     1

att cac aca tta gct gat cat ggt gac gat gtc aac tgc tgt gcc ttc      223
Ile His Thr Leu Ala Asp His Gly Asp Asp Val Asn Cys Cys Ala Phe
   5                               10                               15                               20

tcc ttt tcc ctc ttg gct act tgc tcc ttg gac aaa aca att cgc ctg      271
Ser Phe Ser Leu Leu Ala Thr Cys Ser Leu Asp Lys Thr Ile Arg Leu
  21                               26                               31                               36

tac tcg tta cgt gac ttt act gaa ctg cca cat tct cca ttg aag ttt      319
Tyr Ser Leu Arg Asp Phe Thr Glu Leu Pro His Ser Pro Leu Lys Phe
  37                               42                               47                               52

cat acc tat gct gtc cac tgc tgc tgt ttc tcc cct tca gga cat att      367
His Thr Tyr Ala Val His Cys Cys Cys Phe Ser Pro Ser Gly His Ile
  53                               58                               63                               68

ttg gca tcg tgt tca aca gat ggt acc act gtc cta tgg aat act gaa      415
Leu Ala Ser Cys Ser Thr Asp Gly Thr Thr Val Leu Trp Asn Thr Glu
  69                               74                               79                               84

aat gga cag atg ctg gca gtg atg gaa cag cct agt ggc agc cct gtg      463
Asn Gly Gln Met Leu Ala Val Met Glu Gln Pro Ser Gly Ser Pro Val
  85                               90                               95                               100

agg gtt tgc cag ttt tcc cca gac tcc acg tgt ttg gca tca ggg gca      511
Arg Val Cys Gln Phe Ser Pro Asp Ser Thr Cys Leu Ala Ser Gly Ala
 101                               106                               111                               116

gct gat gga act gtg gtt ttg tgg aat gca cag tca tac aaa tta tat      559
Ala Asp Gly Thr Val Val Leu Trp Asn Ala Gln Ser Tyr Lys Leu Tyr
 117                               122                               127                               132

aga tgt ggt agt gtt aaa gat ggc tcc ttg gcg gca tgt gca ttt tct      607
Arg Cys Gly Ser Val Lys Asp Gly Ser Leu Ala Ala Cys Ala Phe Ser
 133                               138                               143                               148

cct aat gga agc ttc ttt gtc act ggc tcc tca tgt ggt gat tta aca      655
Pro Asn Gly Ser Phe Phe Val Thr Gly Ser Ser Cys Gly Asp Leu Thr
 149                               154                               159                               164

gtg tgg gat gat aaa atg agg tgt ctg cat agt gaa aaa gca cat gat      703

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Val	Trp	Asp	Asp	Lys	Met	Arg	Cys	Leu	His	Ser	Glu	Lys	Ala	His	Asp	
165					170					175					180	
ctt	gga	att	acc	tgc	tgc	gat	ttt	tct	tca	cag	cca	gtt	tct	gat	gga	751
Leu	Gly	Ile	Thr	Cys	Cys	Asp	Phe	Ser	Ser	Gln	Pro	Val	Ser	Asp	Gly	
181					186					191					196	
gaa	caa	ggt	ctt	cag	ttt	ttt	cga	ctg	gca	tca	tgt	ggt	cag	gat	tgc	799
Glu	Gln	Gly	Leu	Gln	Phe	Phe	Arg	Leu	Ala	Ser	Cys	Gly	Gln	Asp	Cys	
197					202					207					212	
caa	gtc	aaa	att	tgg	att	gtt	tct	ttt	acc	cat	atc	tta	ggt	ttt	gaa	847
Gln	Val	Lys	Ile	Trp	Ile	Val	Ser	Phe	Thr	His	Ile	Leu	Gly	Phe	Glu	
213					218					223					228	
tta	aaa	tat	aaa	agt	aca	ctg	agt	ggg	cac	tgt	gct	cct	gtt	ctg	gct	895
Leu	Lys	Tyr	Lys	Ser	Thr	Leu	Ser	Gly	His	Cys	Ala	Pro	Val	Leu	Ala	
229					234					239					244	
tgt	gct	ttt	tcc	cat	gat	ggg	cag	atg	cta	gtc	tca	ggg	tca	gtg	gat	943
Cys	Ala	Phe	Ser	His	Asp	Gly	Gln	Met	Leu	Val	Ser	Gly	Ser	Val	Asp	
245					250					255					260	
aag	tct	gtc	ata	gta	tat	gat	act	aat	act	gag	aat	ata	ctt	cac	aca	991
Lys	Ser	Val	Ile	Val	Tyr	Asp	Thr	Asn	Thr	Glu	Asn	Ile	Leu	His	Thr	
261					266					271					276	
ttg	act	cag	cac	acc	agg	tat	gtc	aca	act	tgt	gct	ttt	gca	cct	aat	1039
Leu	Thr	Gln	His	Thr	Arg	Tyr	Val	Thr	Thr	Cys	Ala	Phe	Ala	Pro	Asn	
277					282					287					292	
acc	ctt	tta	ctt	gct	act	ggt	tca	atg	gac	aaa	aca	gtg	aac	atc	tgg	1087
Thr	Leu	Leu	Leu	Ala	Thr	Gly	Ser	Met	Asp	Lys	Thr	Val	Asn	Ile	Trp	
293					298					303					308	
caa	ttt	gac	ctg	gaa	aca	ctt	tgc	caa	gca	agg	agc	aca	gaa	cat	cag	1135
Gln	Phe	Asp	Leu	Glu	Thr	Leu	Cys	Gln	Ala	Arg	Ser	Thr	Glu	His	Gln	
309					314					319					324	
ctg	aag	caa	ttt	acc	gaa	gat	tgg	tca	gag	gag	gat	gtc	tca	aca	tgg	1183
Leu	Lys	Gln	Phe	Thr	Glu	Asp	Trp	Ser	Glu	Glu	Asp	Val	Ser	Thr	Trp	
325					330					335					340	
ctt	tgt	gca	caa	gat	tta	aaa	gat	ctt	gtt	ggt	att	ttc	aag	atg	aat	1231
Leu	Cys	Ala	Gln	Asp	Leu	Lys	Asp	Leu	Val	Gly	Ile	Phe	Lys	Met	Asn	
341					346					351					356	
aac	att	gat	gga	aaa	gaa	ctg	ttg	aat	ctt	aca	aaa	gaa	agt	ctg	gct	1279
Asn	Ile	Asp	Gly	Lys	Glu	Leu	Leu	Asn	Leu	Thr	Lys	Glu	Ser	Leu	Ala	
357					362					367					372	
gat	gat	ttg	aaa	att	gaa	tct	cta	gga	ctg	cgt	agt	aaa	gtg	ctg	agg	1327
Asp	Asp	Leu	Lys	Ile	Glu	Ser	Leu	Gly	Leu	Arg	Ser	Lys	Val	Leu	Arg	
373					378					383					388	
aaa	att	gaa	gag	ctc	agg	acc	aag	gtt	aaa	tcc	ctt	tct	tca	gga	att	1375
Lys	Ile	Glu	Glu	Leu	Arg	Thr	Lys	Val	Lys	Ser	Leu	Ser	Ser	Gly	Ile	

389	394	399	404	
cct gat gaa ttt ata tgt cca ata act aga gaa ctt atg aaa gat ccg				1423
Pro Asp Glu Phe Ile Cys Pro Ile Thr Arg Glu Leu Met Lys Asp Pro				
405	410	415	420	
gtc atc gca tca gat ggc tat tca tat gaa aag gaa gca atg gaa aat				1471
Val Ile Ala Ser Asp Gly Tyr Ser Tyr Glu Lys Glu Ala Met Glu Asn				
421	426	431	436	
tgg atc agc aaa aag aaa cgt aca agt ccc atg aca aat ctt gtt ctt				1519
Trp Ile Ser Lys Lys Lys Arg Thr Ser Pro Met Thr Asn Leu Val Leu				
437	442	447	452	
cct tca gcg gta ctt aca cca aat agg act ctg aaa atg gcc atc aat				1567
Pro Ser Ala Val Leu Thr Pro Asn Arg Thr Leu Lys Met Ala Ile Asn				
453	458	463	468	
aga tgg ctg gag aca cac caa aag taa aattg ttgatattgt attatttata				1619
Arg Trp Leu Glu Thr His Gln Lys *				
469	474			
ttttcagtga tctcatttga atgatttata ggtaaataact aatcagacat tattaagaagc				1679
aaaacaggaa aaaggtaaac ttcttaaatt tagttaccta taaaaattgt caattttcat				1739
tcttttaaaaa cacatggact tactataaaaa gcctttttgt actagtgaagaa agaattcttca				1799
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atg ttt caa act ggg ggc ctc att gtc ttc tac ggg ctg tta gcc cag	167
Met Phe Gln Thr Gly Gly Leu Ile Val Phe Tyr Gly Leu Leu Ala Gln	
1 5 10 15	
acc atg gcc cag ttt gga ggc ctg ccc gtg ccc ctg gac cag acc ctg	215
Thr Met Ala Gln Phe Gly Gly Leu Pro Val Pro Leu Asp Gln Thr Leu	
17 22 27 32	
ccc ttg aat gtg aat cca gcc ctg ccc ttg agt ccc aca ggt ctt gca	263
Pro Leu Asn Val Asn Pro Ala Leu Pro Leu Ser Pro Thr Gly Leu Ala	
33 38 43 48	

gga agc ttg aca aat gcc ctc agc aat ggc ctg ctg tct ggg ggc ctg	311
Gly Ser Leu Thr Asn Ala Leu Ser Asn Gly Leu Leu Ser Gly Gly Leu	
49 54 59 64	
ttg ggc att ctg gaa aac ctt ccg ctc ctg gac atc ctg aag cct gga	359
Leu Gly Ile Leu Glu Asn Leu Pro Leu Leu Asp Ile Leu Lys Pro Gly	
65 70 75 80	
gga ggt act tct ggt ggc ctc ctt ggg gga ctg ctt gga aaa gtg acg	407
Gly Gly Thr Ser Gly Gly Leu Leu Gly Gly Leu Leu Gly Lys Val Thr	
81 86 91 96	
tca gtg att cct ggc ctg aac aac atc att gac ata aag gtc act gac	455
Ser Val Ile Pro Gly Leu Asn Asn Ile Ile Asp Ile Lys Val Thr Asp	
97 102 107 112	
ccc cag ctg ctg gaa ctt ggc ctt gtg cag agc cct gat ggc cac cgt	503
Pro Gln Leu Leu Glu Leu Gly Leu Val Gln Ser Pro Asp Gly His Arg	
113 118 123 128	
ctc tat gtc acc atc cct ctc ggc ata aag ctc caa gtg aat acg ccc	551
Leu Tyr Val Thr Ile Pro Leu Gly Ile Lys Leu Gln Val Asn Thr Pro	
129 134 139 144	
ctg gtc ggt gca agt ctg ttg agg ctg gct gtg aag ctg gac atc act	599
Leu Val Gly Ala Ser Leu Leu Arg Leu Ala Val Lys Leu Asp Ile Thr	
145 150 155 160	
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Ala Glu Ile Leu Ala Val Arg Asp Lys Gln Glu Arg Ile His Leu Val	
161 166 171 176	
ctt ggt gac tgc acc cat tcc cct gga agc ctg caa att tct ctg ctt	695
Leu Gly Asp Cys Thr His Ser Pro Gly Ser Leu Gln Ile Ser Leu Leu	
177 182 187 192	
gat gga ctt ggc ccc ctc ccc att caa ggt ctt ctg gac agc ctc aca	743
Asp Gly Leu Gly Pro Leu Pro Ile Gln Gly Leu Leu Asp Ser Leu Thr	
193 198 203 208	
ggg atc ttg aat aaa gtc ctg cct gag ttg gtt cag ggc aac gtg tgc	791
Gly Ile Leu Asn Lys Val Leu Pro Glu Leu Val Gln Gly Asn Val Cys	
209 214 219 224	
cct ctg gtc aat gag gtt ctc aga ggc ttg gac atc acc ctg gtg cat	839
Pro Leu Val Asn Glu Val Leu Arg Gly Leu Asp Ile Thr Leu Val His	
225 230 235 240	
gac att gtt aac atg ctg atc cac gga cta cag ttt gtc atc aag gtc	887
Asp Ile Val Asn Met Leu Ile His Gly Leu Gln Phe Val Ile Lys Val	
241 246 251 256	
taa gcct tccaggaagg ggctggcctc tgctgagctg cttcccagtg ctcacagatg	944
* 257	

gctggcccat gtgctggaag atgacacagt tgccttctct ccgaggaacc tgccccctct 1004
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 ctgcaaa 1071

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 <222> (56)..(412)

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 Ala Ser Gln Ser Gln Gly Ile Gln Gln Leu Leu Gln Ala Glu Lys Arg
 2 7 12 17
 gca gct gag aag gtg gca gat gcc aga aag agg aag gcc cgg cga ctg 154
 Ala Ala Glu Lys Val Ala Asp Ala Arg Lys Arg Lys Ala Arg Arg Leu
 18 23 28 33
 aag cag gca aag gag gag gca cag atg gag gtg gag caa tac cgc aga 202
 Lys Gln Ala Lys Glu Glu Ala Gln Met Glu Val Glu Gln Tyr Arg Arg
 34 39 44 49
 gag cga gag cac gaa ttc cag agc aag cag cag gcg gcc atg ggc tcc 250
 Glu Arg Glu His Glu Phe Gln Ser Lys Gln Gln Ala Ala Met Gly Ser
 50 55 60 65
 cag ggg aac ctg tct gct gag gtg gag cag gct aca agg cgc cag gtg 298
 Gln Gly Asn Leu Ser Ala Glu Val Glu Gln Ala Thr Arg Arg Gln Val
 66 71 76 81
 cag ggc atg cag agc tcc cag cag aga aac cga gag cgt gtc ctg gcc 346
 Gln Gly Met Gln Ser Ser Gln Gln Arg Asn Arg Glu Arg Val Leu Ala
 82 87 92 97
 cag ctt ctt ggc atg gtc tgc gac gtc agg ccc cag gtc cac ccc aac 394
 Gln Leu Leu Gly Met Val Cys Asp Val Arg Pro Gln Val His Pro Asn
 98 103 108 113
 tac cgg att tct gcc tag ggccac cgtagggcct gactccttct gccagttccc 448
 Tyr Arg Ile Ser Ala *
 114 119
 tccctcaaag aaatcctcca atcaaaatca cctcccacca taatccctgt cttctttcca 508

tcccctagaa atcctgggag gcaggatcca ataattttcc tgtgacactt ataaatatcc 568
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 agtcattctc acctaaaccc tctgtgaaat ttgtaatatg gggaagtagg aatgtggaaa 688
 acatcctgac ttcagtgtct ggccgatgtg ggtccctctc ttgaccctgt cacttgctgg 748
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 gggatgataa taatgcctac cttgtgaggg ttgcttcaat gattaggaat cattctgtaa 868
 agtctagcag agttccttgc atgttgtagc agtgattcag taagtagcaa ccctgtgata 928
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 <222> (24)..(518)

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 1 5
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 Leu Ser Ile Ala Leu Arg Thr Gln Pro Asn Asp Gly Pro Val Phe Tyr
 10 15 20 25
 aag gtg gac ggg cag cgc ttc ggc cag aac cgc acc atc aag ctg ctc 146
 Lys Val Asp Gly Gln Arg Phe Gly Gln Asn Arg Thr Ile Lys Leu Leu
 26 31 36 41
 acc ggc tcc tcc tac aag gtt gag gtg aag att aag ccc agc acg ctg 194
 Thr Gly Ser Ser Tyr Lys Val Glu Val Lys Ile Lys Pro Ser Thr Leu
 42 47 52 57
 cag gtc gag aat att tcc att ggt ggt gtg ctt gtc cca ctg gaa ctg 242
 Gln Val Glu Asn Ile Ser Ile Gly Gly Val Leu Val Pro Leu Glu Leu
 58 63 68 73
 aag tct aaa gag cct gat ggg gac aga gtt gtt tat acg ggt aca tat 290
 Lys Ser Lys Glu Pro Asp Gly Asp Arg Val Val Tyr Thr Gly Thr Tyr
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 Asp Thr Glu Gly Val Thr Pro Thr Lys Ser Gly Glu Arg Gln Pro Ile

<222> (370) .. (1434)

[illegible]

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Leu Cys Thr Ala Leu Phe Val Ser Phe Ala Ala Gln Gly Lys Pro Leu	
174 179 184 189	
gtc cag tgg ggg aga gac atg ctg cgg gcg gtg cct ctg gca gaa gag	984
Val Gln Trp Gly Arg Asp Met Leu Arg Ala Val Pro Leu Ala Glu Glu	
190 195 200 205	
tac tgc agg aag acc atc cgg cac acg gca gaa tac cag gag cac tgg	1032
Tyr Cys Arg Lys Thr Ile Arg His Thr Ala Glu Tyr Gln Glu His Trp	
206 211 216 221	
ttt tac ttt gaa gct aaa tgg caa ttt tat ttg gag gag agg aaa atc	1080
Phe Tyr Phe Glu Ala Lys Trp Gln Phe Tyr Leu Glu Glu Arg Lys Ile	
222 227 232 237	
agt aaa gac tca gaa aat aaa gcc atc ttc ccc gac aat tat gat gca	1128
Ser Lys Asp Ser Glu Asn Lys Ala Ile Phe Pro Asp Asn Tyr Asp Ala	
238 243 248 253	
gaa gag agg gaa aag acc tac agg aag tgg agc tcg gaa ggt cga ggg	1176
Glu Glu Arg Glu Lys Thr Tyr Arg Lys Trp Ser Ser Glu Gly Arg Gly	
254 259 264 269	
gga aga cga ggc cac gat gcc ccc atg ata gcc tat gac gcc ctc ctt	1224
Gly Arg Arg Gly His Asp Ala Pro Met Ile Ala Tyr Asp Ala Leu Leu	
270 275 280 285	
gca gca gga aac agc tgg act gag ctg tgt cac cgg gcc atg ttt cat	1272
Ala Ala Gly Asn Ser Trp Thr Glu Leu Cys His Arg Ala Met Phe His	
286 291 296 301	
gga ggg gag agc gcg gcc acg ggc acc att gca ggc tgc ctg ttc ggg	1320
Gly Gly Glu Ser Ala Ala Thr Gly Thr Ile Ala Gly Cys Leu Phe Gly	
302 307 312 317	
ttg ctg tac ggc ctg gac ctc gtt ccc aaa ggc ttg tac cag gac ctg	1368
Leu Leu Tyr Gly Leu Asp Leu Val Pro Lys Gly Leu Tyr Gln Asp Leu	
318 323 328 333	
gag gac aag gag aag ctg gag gac ctg ggc gcg gct ctc tac cgc ctg	1416
Glu Asp Lys Glu Lys Leu Glu Asp Leu Gly Ala Ala Leu Tyr Arg Leu	
334 339 344 349	
tcc aca gag gag aag taa agccat ttctgccact ttccccctag agagccgatt	1470
Ser Thr Glu Glu Lys *	
350 355	
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 Met Phe Ala Arg Gly Leu Lys Arg Lys Cys Val Gly
 1 5 10
 cac gag gaa gac gtg gag gga gcc ctg gcc ggc ttg aag aca gtg tcc 156
 His Glu Glu Asp Val Glu Gly Ala Leu Ala Gly Leu Lys Thr Val Ser
 13 18 23 28
 tca tac agc ctg cag cgg cag tcg ctc ctg gac atg tct ctg gtg aag 204
 Ser Tyr Ser Leu Gln Arg Gln Ser Leu Leu Asp Met Ser Leu Val Lys
 29 34 39 44
 ttg cag ctt tgc cac atg ctt gtg gag ccc aac ctg tgc cgc tca gtc 252
 Leu Gln Leu Cys His Met Leu Val Glu Pro Asn Leu Cys Arg Ser Val
 45 50 55 60
 ctc att gcc aac acg gtc cgg cag atc caa gag gag atg acg cag gat 300
 Leu Ile Ala Asn Thr Val Arg Gln Ile Gln Glu Glu Met Thr Gln Asp

61	66	71	76	
ggg acg tgg cgc aca gtg gca ccc cag gct gca gag cgg gcg ccg ctc				348
Gly Thr Trp Arg Thr Val Ala Pro Gln Ala Ala Glu Arg Ala Pro Leu				
77	82	87	92	
gac cgc ttg gtc tcc acg gag atc ctg tgc cgt gca gcg tgg ggg caa				396
Asp Arg Leu Val Ser Thr Glu Ile Leu Cys Arg Ala Ala Trp Gly Gln				
93	98	103	108	
gag ggg gca cat cct gct tct ggc ttg ggg gac ggc cac aca cag ggt				444
Glu Gly Ala His Pro Ala Ser Gly Leu Gly Asp Gly His Thr Gln Gly				
109	114	119	124	
cca gtt tct gac ctt tgc cca gtc acc tca gca cag gca cca agg cac				492
Pro Val Ser Asp Leu Cys Pro Val Thr Ser Ala Gln Ala Pro Arg His				
125	130	135	140	
ctg cag agc agc gcc tgg gag atg gat ggc cct cga gaa aac aga gga				540
Leu Gln Ser Ser Ala Trp Glu Met Asp Gly Pro Arg Glu Asn Arg Gly				
141	146	151	156	
agc ttt cac aag tca ctt gat cag ata ttt gaa acg ctg gag act aaa				588
Ser Phe His Lys Ser Leu Asp Gln Ile Phe Glu Thr Leu Glu Thr Lys				
157	162	167	172	
aac ccc agc tgc atg gaa gag ctg ttc tca gac gtg gac agc ccc tac				636
Asn Pro Ser Cys Met Glu Glu Leu Phe Ser Asp Val Asp Ser Pro Tyr				
173	178	183	188	
tac gac ctg gac aca gta ctg aca ggc atg atg ggg ggt gcc agg ccg				684
Tyr Asp Leu Asp Thr Val Leu Thr Gly Met Met Gly Gly Ala Arg Pro				
189	194	199	204	
ggc ccc tgc gaa ggg ctc gag ggc ttg gct ccg gcc acc cca ggc cct				732
Gly Pro Cys Glu Gly Leu Glu Gly Leu Ala Pro Ala Thr Pro Gly Pro				
205	210	215	220	
agc tcc agc tgc aag tcc gac ctg ggc gag ctg gac cac gtg gtg gag				780
Ser Ser Ser Cys Lys Ser Asp Leu Gly Glu Leu Asp His Val Val Glu				
221	226	231	236	
atc ctg gtg gag acc tga gcagga gccctgagtg ctcacagccg cctctgacgc				834
Ile Leu Val Glu Thr *				
237	242			
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 <222> (14) .. (454)

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<400> 774

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Arg Pro Lys Lys Glu Pro Gln Thr Leu Val Ile Pro Lys Asn Ala Ala		
13 18 23 28		
gag gag cag aag ctc aag ctg gag cgg ctc atg aag aac ccg gac aaa		145
Glu Glu Gln Lys Leu Lys Leu Glu Arg Leu Met Lys Asn Pro Asp Lys		
29 34 39 44		
gca gtt cca att cca gag aaa atg agt gaa tgg gca cct cga cct ccc		193
Ala Val Pro Ile Pro Glu Lys Met Ser Glu Trp Ala Pro Arg Pro Pro		
45 50 55 60		
cca gaa ttt gtc cga gat gtc atg ggt tca agt gct ggg gcc ggc agt		241
Pro Glu Phe Val Arg Asp Val Met Gly Ser Ser Ala Gly Ala Gly Ser		
61 66 71 76		
gga gag ttc cac gtg tac aga cat ctg cgc cgg aga gaa tat cag cga		289
Gly Glu Phe His Val Tyr Arg His Leu Arg Arg Arg Glu Tyr Gln Arg		
77 82 87 92		
cag gac tac atg gat gcc atg gct gag aag caa aaa ttg gat gca gag		337
Gln Asp Tyr Met Asp Ala Met Ala Glu Lys Gln Lys Leu Asp Ala Glu		
93 98 103 108		
ttt cag aaa aga ctg gaa aag aat aaa att gct gca gag gag cag acc		385
Phe Gln Lys Arg Leu Glu Lys Asn Lys Ile Ala Ala Glu Glu Gln Thr		
109 114 119 124		
gca aag cgc cgg aag aag cgc cag aag tta aaa gag aag aaa tta ctg		433
Ala Lys Arg Arg Lys Lys Arg Gln Lys Leu Lys Glu Lys Lys Leu Leu		
125 130 135 140		
gcc aaa gaa gat gaa act tga ac agaagaaaca agaagggact ccggtcagct		486
Ala Lys Glu Asp Glu Thr *		
141 146		
ccaaggagca ggggggtccag cagctcttgc ggaggcatct ggaacagagg aggaggaggg		546
gagtgccagt ttcacatgg ngcgatgaca aggttggcac agcctctgcc tggaacctgg		606
tcgtgctgtg accagaanag gaaaggcggc tgtttgggct cttttctcct cgcangggac		666
cngctgaccc ngctggatgg gagagcaagg aganccctc cngagcngnt cacaagtctg		726

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cacatcgtgc ttcttggtaa ggggacg 813

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cctgggatgc ttctcccctt ccgcgaggaa gagatctaatt tgggtagggc ggggtgtagac 180
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cctgcccaac agaagccgca gtcccggtgg gtctggagac gcagtttctt gttaatgaca 360
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ggtccacacc gcgaggggaag atg cgt gcg ccc att cca gag cct aag cct 470
Met Arg Ala Pro Ile Pro Glu Pro Lys Pro
1 5
gga gac ctg att gag att ttt cgc cct ttc tac aga cac tgg gcc atc 518
Gly Asp Leu Ile Glu Ile Phe Arg Pro Phe Tyr Arg His Trp Ala Ile
11 16 21 26
tat gtt ggc gat gga tat gtg gtt cat ctg gcc cct cca agt gag gtc 566
Tyr Val Gly Asp Gly Tyr Val Val His Leu Ala Pro Pro Ser Glu Val
27 32 37 42
gca gga gct ggt gca gcc agt gtc atg tcc gcc ctg act gac aag gcc 614
Ala Gly Ala Gly Ala Ala Ser Val Met Ser Ala Leu Thr Asp Lys Ala
43 48 53 58
atc gtg aag aag gaa ttg ctg tat gat gtg gcc ggg agt gac aag tac 662
Ile Val Lys Lys Glu Leu Leu Tyr Asp Val Ala Gly Ser Asp Lys Tyr
59 64 69 74
cag gtc aac aac aaa cat gat gac aag tac tcg ccg ctg ccc tgc agc 710
Gln Val Asn Asn Lys His Asp Asp Lys Tyr Ser Pro Leu Pro Cys Ser
75 80 85 90
aaa atc atc cag cgg gcg gag gag ctg gtg ggg cag gag gtg ctc tac 758

Lys	Ile	Ile	Gln	Arg	Ala	Glu	Glu	Leu	Val	Gly	Gln	Glu	Val	Leu	Tyr	
91					96					101					106	
aag	ctg	acc	agt	gag	aac	tgc	gag	cac	ttt	gtg	aat	gag	ctg	cgc	tat	806
Lys	Leu	Thr	Ser	Glu	Asn	Cys	Glu	His	Phe	Val	Asn	Glu	Leu	Arg	Tyr	
107					112					117					122	
gga	gtc	gcc	cgc	agt	gac	cag	gtc	aga	gat	gtc	atc	atc	gct	gca	agc	854
Gly	Val	Ala	Arg	Ser	Asp	Gln	Val	Arg	Asp	Val	Ile	Ile	Ala	Ala	Ser	
123					128					133					138	
ggt	gca	gga	atg	ggc	ttg	gca	gcc	atg	agc	ctt	att	gga	gtc	atg	ttc	902
Val	Ala	Gly	Met	Gly	Leu	Ala	Ala	Met	Ser	Leu	Ile	Gly	Val	Met	Phe	
139					144					149					154	
tca	aga	aac	aag	cga	caa	aag	caa	taa	ctgaa	aaagactgtc	ctgtcagcga					954
Ser	Arg	Asn	Lys	Arg	Gln	Lys	Gln	*								
155					160											
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ttcattgtga	tttataataa	ggcttatttt	cacagaataa	aataaagcaa	aacgagggag											1074
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					Met Glu											
					1											
ctg	gcc	gcc	gga	agc	ttc	tcg	gag	gag	cag	ttc	tgg	gag	gcc	tgc	gcc	163
Leu	Ala	Ala	Gly	Ser	Phe	Ser	Glu	Glu	Gln	Phe	Trp	Glu	Ala	Cys	Ala	
3					8					13					18	
gag	ctc	cag	cag	ccc	gct	ctg	gcc	ggg	gcc	gac	tgg	cag	ctc	cta	gtg	211
Glu	Leu	Gln	Gln	Pro	Ala	Leu	Ala	Gly	Ala	Asp	Trp	Gln	Leu	Leu	Val	
19					24					29					34	

gag acc tcg ggc atc agc atc tac cgg ctg ctg gac aag aag act gga	259
Glu Thr Ser Gly Ile Ser Ile Tyr Arg Leu Leu Asp Lys Lys Thr Gly	
35 40 45 50	
ctt tat gag tat aaa gtc ttt ggt gtt ctg gag gac tgc tca cca act	307
Leu Tyr Glu Tyr Lys Val Phe Gly Val Leu Glu Asp Cys Ser Pro Thr	
51 56 61 66	
cta ctg gca gac atc tat atg gac tca gat tac aga aaa caa tgg gac	355
Leu Leu Ala Asp Ile Tyr Met Asp Ser Asp Tyr Arg Lys Gln Trp Asp	
67 72 77 82	
cag tat gtt aaa gaa ctc tat gaa caa gaa tgc aac gga gag act gtg	403
Gln Tyr Val Lys Glu Leu Tyr Glu Gln Glu Cys Asn Gly Glu Thr Val	
83 88 93 98	
gtc tac tgg gaa gtg aag tac cct ttt ccc atg tcc aac aga gac tat	451
Val Tyr Trp Glu Val Lys Tyr Pro Phe Pro Met Ser Asn Arg Asp Tyr	
99 104 109 114	
gtc tac ctt cgg cag cgg cga gac ctg gac atg gaa ggg agg aag atc	499
Val Tyr Leu Arg Gln Arg Arg Asp Leu Asp Met Glu Gly Arg Lys Ile	
115 120 125 130	
cat gtg atc ctg gcc cgg agc acc tcc atg cct cag ctt ggc gag agg	547
His Val Ile Leu Ala Arg Ser Thr Ser Met Pro Gln Leu Gly Glu Arg	
131 136 141 146	
tct ggg gtg atc cgg gtg aag caa tac aag cag agc ctg gcg atc gag	595
Ser Gly Val Ile Arg Val Lys Gln Tyr Lys Gln Ser Leu Ala Ile Glu	
147 152 157 162	
agt gac ggc aag aag ggg agc aaa gtt ttc atg tat tac ttc gat aac	643
Ser Asp Gly Lys Lys Gly Ser Lys Val Phe Met Tyr Tyr Phe Asp Asn	
163 168 173 178	
ccg ggt ggc caa att ccg tcc tgg ctc att aac tgg gcc gcc aag aat	691
Pro Gly Gly Gln Ile Pro Ser Trp Leu Ile Asn Trp Ala Ala Lys Asn	
179 184 189 194	
gga gtt cct aac ttc ttg aaa gac atg gca aga gcc tgt cag aac tac	739
Gly Val Pro Asn Phe Leu Lys Asp Met Ala Arg Ala Cys Gln Asn Tyr	
195 200 205 210	
ctc aag aaa acc taa gaaagagaac tgggaacatt gcatccatgg gttgatgtct	794
Leu Lys Lys Thr *	
211	
ctggaagtgc aaccacccaa tgtctctgga agtgccacct ggaagtgcc cctggaagtg	854
tctctggaag agcaccacc actgttcagc ctccctctgc tgcttctgtc ttcagaggcc	914
taacactac cacatccttt ctaagcatgt ttgcctgaca tccagctcac tcgtctgctt	974
cctttctcgc tcccccatc ctggggctgg gctggccttc ttctacagtt caatatgggg	1034
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1125

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<222> (58)..(1653)

<400> 777

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Met	Cys	Ser	Leu	Ala	Ser	Gly	Ala	Thr	Gly	Gly	Arg	Gly	Ala	Val	Glu		
1				5					10					15			
aat	gag	gag	gac	ctg	cca	gaa	ctg	tcg	gac	agc	ggg	gac	gag	gcc	gcc		153
Asn	Glu	Glu	Asp	Leu	Pro	Glu	Leu	Ser	Asp	Ser	Gly	Asp	Glu	Ala	Ala		
17				22					27					32			
tgg	gag	gat	gag	gac	gat	gca	gat	ctc	ccc	cac	ggc	aag	cag	cag	acc		201
Trp	Glu	Asp	Glu	Asp	Asp	Ala	Asp	Leu	Pro	His	Gly	Lys	Gln	Gln	Thr		
33				38					43					48			
ccc	tgc	ctg	ttc	tgt	aac	agg	tta	ttc	aca	tct	gct	gaa	gaa	aca	ttt		249
Pro	Cys	Leu	Phe	Cys	Asn	Arg	Leu	Phe	Thr	Ser	Ala	Glu	Glu	Thr	Phe		
49				54					59					64			
tca	cac	tgt	aag	tct	gag	cat	cag	ttt	aat	att	gac	agc	atg	gtt	cat		297
Ser	His	Cys	Lys	Ser	Glu	His	Gln	Phe	Asn	Ile	Asp	Ser	Met	Val	His		
65				70					75					80			
aaa	cat	gga	ctt	gaa	ttt	tat	gga	tac	att	aag	cta	ata	aat	ttt	att		345
Lys	His	Gly	Leu	Glu	Phe	Tyr	Gly	Tyr	Ile	Lys	Leu	Ile	Asn	Phe	Ile		
81				86					91					96			
aga	ctt	aag	aat	cct	aca	gtt	gag	tac	atg	aat	tcc	ata	tac	aac	cca		393
Arg	Leu	Lys	Asn	Pro	Thr	Val	Glu	Tyr	Met	Asn	Ser	Ile	Tyr	Asn	Pro		
97				102					107					112			
gtg	cct	tgg	gag	aaa	gaa	gag	tat	ttg	aag	cca	gta	tta	gaa	gat	gac		441
Val	Pro	Trp	Glu	Lys	Glu	Glu	Tyr	Leu	Lys	Pro	Val	Leu	Glu	Asp	Asp		
113				118					123					128			
ctt	tta	ctt	caa	ttt	gat	gta	gaa	gat	ctt	tat	gaa	ccg	gtg	tca	gta		489
Leu	Leu	Leu	Gln	Phe	Asp	Val	Glu	Asp	Leu	Tyr	Glu	Pro	Val	Ser	Val		
129				134					139					144			
ccc	ttc	tca	tac	ccc	aat	gga	ctc	agt	gaa	aat	aca	tct	gtt	gtt	gaa		537
Pro	Phe	Ser	Tyr	Pro	Asn	Gly	Leu	Ser	Glu	Asn	Thr	Ser	Val	Val	Glu		
145				150					155					160			

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 aaatatgtac ttatttacta acgtattatc tttttcaaac cagatttatg tgcaaagggt 2416
 aaacatgtaa ctgttactaa gcagtctata aagttgtcat ttacaattac tgattcaatt 2476
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 <212> DNA
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 <222> (391) .. (753)

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 <222> (1) ... (2504)
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 cgggcggcct ggcgcggcgc tccggtaagg cgtgtgtgcg gcaggcgagg gacagaaccg 180
 tcctctcggg ctctgggcgt gtccgagacc gcgctccccg ccgaaatcaa gtcctgagtc 240
 atccgtgtgg ggcattcgtc cccctggca cagttggcct ctttccagaa gcccgttttg 300
 tttgttttac gtctaaatc gcgtcggttc ttatttctct ccttggaag gtctgaagac 360
 gggtaggaga ataacctgtg tcagcgtgtt atg atg ccg tcc cgt acc aac 411
 Met Met Pro Ser Arg Thr Asn
 1 5
 ctg gct act gga atc ccc agt agt aaa gtg aaa tat tca agg ctc tcc 459
 Leu Ala Thr Gly Ile Pro Ser Ser Lys Val Lys Tyr Ser Arg Leu Ser
 8 13 18 23
 agc aca gac gat ggc tac att gac ctt cag ttt aag aaa acc cct cct 507
 Ser Thr Asp Asp Gly Tyr Ile Asp Leu Gln Phe Lys Lys Thr Pro Pro
 24 29 34 39
 aag atc cct tat aag gcc atc gca ctt gcc act gtg ctg ttt ttg att 555
 Lys Ile Pro Tyr Lys Ala Ile Ala Leu Ala Thr Val Leu Phe Leu Ile
 40 45 50 55
 ggc gcc ttt ctc att att ata ggc tcc ctc ctg ctg tca ggc tac atc 603

Gly	Ala	Phe	Leu	Ile	Ile	Ile	Gly	Ser	Leu	Leu	Leu	Ser	Gly	Tyr	Ile		
56					61					66					71		
agc	aaa	ggg	ggg	gca	gac	cgg	gcc	gtt	cca	gtg	ctg	atc	att	ggc	att	651	
Ser	Lys	Gly	Gly	Ala	Asp	Arg	Ala	Val	Pro	Val	Leu	Ile	Ile	Gly	Ile		
72					77					82					87		
ctg	gtg	ttc	cta	ccc	gga	ttt	tac	cac	ctg	cgc	atc	gct	tac	tat	gca	699	
Leu	Val	Phe	Leu	Pro	Gly	Phe	Tyr	His	Leu	Arg	Ile	Ala	Tyr	Tyr	Ala		
88					93					98					103		
tcc	aaa	ggc	tac	cgt	ggt	tac	tcc	tat	gat	gac	att	cca	gac	ttt	gat	747	
Ser	Lys	Gly	Tyr	Arg	Gly	Tyr	Ser	Tyr	Asp	Asp	Ile	Pro	Asp	Phe	Asp		
104					109					114					119		
gac	tag	cacccacccc	atagctgagg	aggagtcaca	gtggaactgt	cccagcttta	803										
Asp	*																
120																	
agatatctag	cagaaactat	agctgaggac	taaggaattc	tcagcttgc	agatgtttaa	863											
gaaaataatg	gccagatttt	ttgggtcctt	cccaaagatg	ttaagtgaac	ctacagttag	923											
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gaacaatgtg	gtatggctaa	tttcttatta	ttaagtaatt	tattttaaaa	atatctgagt	1163											
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aagatcagtg	agttcatctg	taatattttt	tttacttgct	ttcttactga	cagcaaccag	1283											
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ccttggacca	ttctgatcca	gttcaccagt	aggttggaca	gcatataatt	tacaagggac	1403											
aaaatgatgc	aaattatatg	ctgtccaacc	tactggtgaa	ctggatcaga	atgggtccaag	1463											
gactgttaaa	cagaggaagt	atttacattt	tgaaaacttg	ctctgcagga	taaaaaaatt	1523											
cctggttgct	gtcagtaaga	aagcaagtaa	aaaaaatatt	acagatgaac	tactgatct	1583											
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ccatttgcta	caagaacaaa	ttggcaatga	agactattta	aaagaaatgc	tcagctctac	1763											
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atattcctgt	ggaaaaactt	gtcagggccc	agggatgaaa	aatagagctt	gtcctaatta	1883											
gctaactgta	ggttcactta	acatctttgg	gaaggaccca	aaaaatctgg	ccattatttt	1943											

cttaaaccatc tgcaagctgc agaattcctt agtcctcagc tatagtttct gctagatatac 2003
 ttaaagctgg gacagttcca ctgtgactcc tcctcagcta tgggggtgggt gctagtcatac 2063
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 gcccgcacac ccagagctcg cccacgggtg gcagcgccca aggttgcatg gcatggcccg 2423
 cttaagtgcc actcagccga attccnccac ntggataggg atctcgatng gnnttcgatt 2483
 cccnnnnctc cttcaatcac a 2504

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 <212> DNA
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 <222> (244) .. (645)

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 acttgtaaac gaccttaaaa gcatttgag ttagttaaga acagataatg tatcttttgg 180
 ccagagcgtc acccaggatt cttttgcacg gcaggtctga gcagagggcg ggggtgcaggc 240
 gga atg gcc ctc gtg ccc tat gag gag acc acg gaa ttt ggg ttg cag 288
 Met Ala Leu Val Pro Tyr Glu Glu Thr Thr Glu Phe Gly Leu Gln
 1 5 10
 aaa ttc cac aag cct ctt gca act ttt tcc ttt gca aac cac acg atc 336
 Lys Phe His Lys Pro Leu Ala Thr Phe Ser Phe Ala Asn His Thr Ile
 16 21 26 31
 cag atc cgg cag gac tgg aga cac ctg gga gtc gca gcg gtg gtt tgg 384
 Gln Ile Arg Gln Asp Trp Arg His Leu Gly Val Ala Ala Val Val Trp
 32 37 42 47
 gat gcg gcc atc gtt ctt tcc aca tac ctg gag atg gga gct gtg gag 432
 Asp Ala Ala Ile Val Leu Ser Thr Tyr Leu Glu Met Gly Ala Val Glu
 48 53 58 63

ctc agg ggc cgc tct gcc gtg gag ctg ggt gct ggc acg ggg ctg gtg	480
Leu Arg Gly Arg Ser Ala Val Glu Leu Gly Ala Gly Thr Gly Leu Val	
64 69 74 79	
ggc ata gtg gct gcc ctg ctg gca tgc cga att cgc tat gaa cgg gat	528
Gly Ile Val Ala Ala Leu Leu Ala Cys Arg Ile Arg Tyr Glu Arg Asp	
80 85 90 95	
aac aac ttc tta gca atg ctg gag agg caa ttt att gtg aga aag gtt	576
Asn Asn Phe Leu Ala Met Leu Glu Arg Gln Phe Ile Val Arg Lys Val	
96 101 106 111	
cac tac gat cct gaa aaa gat gta cat att tac gaa gca cag acg aga	624
His Tyr Asp Pro Glu Lys Asp Val His Ile Tyr Glu Ala Gln Thr Arg	
112 117 122 127	
aac cag aag gag gac tta taa tt ggctataatt tataagaatg ttgtcattga	677
Asn Gln Lys Glu Asp Leu *	
128 133	
gtgtg	682

<210> 780
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 <213> Homo sapiens

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ggctaatttt tgtattttta gtagagacgg gggtttctact atgttgcca ggatgctctg	240
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gagccccac gctggctggg aggggtgcagt tcctcaagtg ggattgtgga tttgtaggac	360
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aggctcgtgt ttatctgctg tgagatcctg gacaagctgc ttcaccttcc caagtcctgt	600
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cgtttgcgaa aacttgcgga agctggagat cacaggcgtg tcttgtcggg acgtctatgc	720
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cggaggactg ctgaacgtgg tggtaggacgg cctgttcac atcggttg atg tac Met Tyr 1	835
ctg cct ccc cat gac ccc cac gtc gat gac cct atg aga ttc aag cct Leu Pro Pro His Asp Pro His Val Asp Asp Pro Met Arg Phe Lys Pro 3 8 13 18	883
ctg ttc agg atc cac ctg atg gag agg aag gct gcc aca gtg gag tgc Leu Phe Arg Ile His Leu Met Glu Arg Lys Ala Ala Thr Val Glu Cys 19 24 29 34	931
atg tac ggc cac aaa ggg ccc cac cac ggc cac atc cag att gtg aag Met Tyr Gly His Lys Gly Pro His His Gly His Ile Gln Ile Val Lys 35 40 45 50	979
aag gat gag ttc tcc acc aag tgc aac cag acg gac cac cac agg atg Lys Asp Glu Phe Ser Thr Lys Cys Asn Gln Thr Asp His His Arg Met 51 56 61 66	1027
tcc ggc ggg agg cag gag gag ttt cgg acg tgg ctg agg gag gaa tgg Ser Gly Gly Arg Gln Glu Glu Phe Arg Thr Trp Leu Arg Glu Glu Trp 67 72 77 82	1075
ggg cgc acg ctg gag gac atc ttc cac gag cac atg cag gag ctc atc Gly Arg Thr Leu Glu Asp Ile Phe His Glu His Met Gln Glu Leu Ile 83 88 93 98	1123
ctg atg aag ttc atc tac acc agt cag tac gac aac tgc ctg acc tac Leu Met Lys Phe Ile Tyr Thr Ser Gln Tyr Asp Asn Cys Leu Thr Tyr 99 104 109 114	1171
cgc cgc atc tac ctg ccg ccc agc cgc ccc gac gac ctc atc aag cct Arg Arg Ile Tyr Leu Pro Pro Ser Arg Pro Asp Asp Leu Ile Lys Pro 115 120 125 130	1219
ggc ctc ttc aaa ggt acc tat ggc agc cac ggc ctg gag att gtg atg Gly Leu Phe Lys Gly Thr Tyr Gly Ser His Gly Leu Glu Ile Val Met 131 136 141 146	1267
ctc agc ttc cac ggc cgg cgt gcc agg ggc acc aag atc acg ggc gac Leu Ser Phe His Gly Arg Arg Ala Arg Gly Thr Lys Ile Thr Gly Asp 147 152 157 162	1315
ccc aac atc ccc gct ggg cag cag aca gtg gag atc gac ctg agg cat Pro Asn Ile Pro Ala Gly Gln Gln Thr Val Glu Ile Asp Leu Arg His 163 168 173 178	1363
cgg atc cag ctg ccc gac ctc gag aac cag cgc aac ttc aat gag ctc Arg Ile Gln Leu Pro Asp Leu Glu Asn Gln Arg Asn Phe Asn Glu Leu 179 184 189 194	1411
tcc cgc atc gtc ctg gag gtg cgc gag agg gtg cgc cag gag cag cag	1459

Ser Arg Ile Val Leu Glu Val Arg Glu Arg Val Arg Gln Glu Gln Gln	195	200	205	210	
gaa ggc ggg cac gag gcg ggc gag ggt cgt ggc cgg cag ggc ccc cgg	211	216	221	226	1507
Glu Gly Gly His Glu Ala Gly Glu Gly Arg Gly Arg Gln Gly Pro Arg					
gag tcc cag cca agc cct gcc cag ccc agg gca gag gcg ccc agc aag	227	232	237	242	1555
Glu Ser Gln Pro Ser Pro Ala Gln Pro Arg Ala Glu Ala Pro Ser Lys					
ggc cca gat ggg aca cct ggt gag gat ggt ggc gag cct ggg gat gcc	243	248	253	258	1603
Gly Pro Asp Gly Thr Pro Gly Glu Asp Gly Gly Glu Pro Gly Asp Ala					
gta gct gcg gcc gag cag cct gcc cag tgt ggg cag ggg cag ccg ttc	259	264	269	274	1651
Val Ala Ala Ala Glu Gln Pro Ala Gln Cys Gly Gln Gly Gln Pro Phe					
gtg ctg ccc gtg ggc gtg agc tcc agg aat gag gac tac ccc cga acc	275	280	285	290	1699
Val Leu Pro Val Gly Val Ser Ser Arg Asn Glu Asp Tyr Pro Arg Thr					
tgc agg atg tgt ttt tat ggc aca ggc ctc atc gcg ggc cac ggc ttc	291	296	301	306	1747
Cys Arg Met Cys Phe Tyr Gly Thr Gly Leu Ile Ala Gly His Gly Phe					
acc agc cct gaa cgc acc ccc ggg gtc ttc atc ctc ttc gat gag gac	307	312	317	322	1795
Thr Ser Pro Glu Arg Thr Pro Gly Val Phe Ile Leu Phe Asp Glu Asp					
cgc ttc ggg ttc gtc tgg ctg gag ctg aaa tcc ttc agc ctg tac agc	323	328	333	338	1843
Arg Phe Gly Phe Val Trp Leu Glu Leu Lys Ser Phe Ser Leu Tyr Ser					
cgg gtc cag gcc acc ttc cgg aac gca gat gcg ccg tcc cca cag gcc	339	344	349	354	1891
Arg Val Gln Ala Thr Phe Arg Asn Ala Asp Ala Pro Ser Pro Gln Ala					
ttc gat gag atg ctc aag aac att cag tcc ctc acc tcc tga ccggcca	355	360	365		1940
Phe Asp Glu Met Leu Lys Asn Ile Gln Ser Leu Thr Ser *					
catccttgcc gccacatccc ggggtggctct ggggctctga actctgacct gtgaatagaa					2000
gcagcatgca ctttggaat cccgcctttt gaccagaacg cacacctcgt cggggggccc					2060
agtccagcca cccccagca ctttatgtag agagtgtgac atagacctgc atatttgtca					2120
gtgccatgat ggaagaagct gagcatgtct taccaaaaac agagagaacg agcctgaata					2180
cagcagatgt aggggacagc cgtgggaccg cgtgagaatt gaagcgggtgg ggttcccgca					2240
ccctgggctg gctggtggtt ttctcgggaa gcaggacct cctgactggt gctcttctg					2300
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tggccttgaa gcctggagga ctgttgggca tgtagactgg caccttgaag attcaccatt	3740
gtttaaataa aatcaagcaa atgctttttt accaagagcc cgagcctcgc tctaaggagc	3800
gcagtcctag aggcgtgccc tttggggctt gaagagcaca ctgtgggacg cacgtgcttc	3860
tgattaaagg aatctcagat ctc	3883

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<211> 910

<212> DNA
<213> Homo sapiens

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<222> (192)..(662)

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<222> (1)...(910)
<223> n = a,t,c or g

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gaggggaggg tgagcagagg acaggccggg agttttccgg gaacggagga agagcagtgg 180
aggctgccag g atg agg ctg ctg tgt ggc ctg tgg ctg tgg ctc tcc ttg 230
Met Arg Leu Leu Cys Gly Leu Trp Leu Trp Leu Ser Leu
1 5 10
ctg aaa gtc ctg cag gcc cag acc cca acc ccc ctg cca ctc ccg ccc 278
Leu Lys Val Leu Gln Ala Gln Thr Pro Thr Pro Leu Pro Leu Pro Pro
14 19 24 29
ccg atg cag agc ttc caa gga aac cag ttc cag ggg gaa tgg ttc gtc 326
Pro Met Gln Ser Phe Gln Gly Asn Gln Phe Gln Gly Glu Trp Phe Val
30 35 40 45
ctg ggc ctg gcg ggc aac agc ttc agg ccg gag cac agg gcg ctg ctg 374
Leu Gly Leu Ala Gly Asn Ser Phe Arg Pro Glu His Arg Ala Leu Leu
46 51 56 61
aac gct ttc acc gca act ttt gag cta agt gat gat ggc cgc ttt gag 422
Asn Ala Phe Thr Ala Thr Phe Glu Leu Ser Asp Asp Gly Arg Phe Glu
62 67 72 77
gtg tgg aat gcg atg act cga ggc cag cac tgt gac aca tgg tct tat 470
Val Trp Asn Ala Met Thr Arg Gly Gln His Cys Asp Thr Trp Ser Tyr
78 83 88 93
gtg ctg ata ccg gca gcc cag cct ggg cag ttc act gtg gac cac ggt 518
Val Leu Ile Pro Ala Ala Gln Pro Gly Gln Phe Thr Val Asp His Gly
94 99 104 109
gtg gac aca cga gca ggc tgg ccg tcc tca gga tca gcc tgc tgg gca 566
Val Asp Thr Arg Ala Gly Trp Pro Ser Ser Gly Ser Ala Cys Trp Ala
110 115 120 125
gga gct ggt tgc tgc ctc ccg gga cgc tgg acc agt tca tct gcc tgg 614
Gly Ala Gly Cys Cys Leu Pro Gly Arg Trp Thr Ser Ser Ser Ala Trp
126 131 136 141
/
gca gag ctc agg gcc tct cgg atg aca aca ttg tct tcc cag atg tga 662
Ala Glu Leu Arg Ala Ser Arg Met Thr Thr Leu Ser Ser Gln Met *

142	147	152	157	
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gacagccgcg	gcccccaagg	cctgactctt	cttgtgggag	ggcgaggctg gtcacccag 782
gccagcgtct	gttgaaggat	gaagcagctc	ctgtccggcc	cagccctgcc tcacagctgt 842
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aaaaaaaaac				910

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 <211> 1041
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (283) .. (954)

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ccgggtgtaa	gacgcccac	cctcctcttc	cctgtcttcg	ccgccgccgc	tgctggagtc	120
actgggaccc	tctagtctgc	gtgtgttagt	tgtaatcccg	ccgccctcct	gtcagccctc	180
cgctccgccc	gccctccttc	cttccgccgc	cgcagccagc	ccgagggctc	gccggctgtg	240
taacactctc	ccaccccacc	caccagccc	cgggccagca	cc	atg gag gac gtg Met Glu Asp Val	294
					1	
aag ctg gag ttc cct tcc ctt cca cag tgc aag gaa gac gcc gag gag						342
Lys Leu Glu Phe Pro Ser Leu Pro Gln Cys Lys Glu Asp Ala Glu Glu						
5 10 15 20						
tgg acc tac cct atg aga cga gag atg cag gaa att tta cct gga ttg						390
Trp Thr Tyr Pro Met Arg Arg Glu Met Gln Glu Ile Leu Pro Gly Leu						
21 26 31 36						
ttc tta ggc cca tat tca tct gct atg aaa agc aag cta cct gta cta						438
Phe Leu Gly Pro Tyr Ser Ser Ala Met Lys Ser Lys Leu Pro Val Leu						
37 42 47 52						
cag aaa cat gga ata acc cat ata ata tgc ata cga caa aat att gaa						486
Gln Lys His Gly Ile Thr His Ile Ile Cys Ile Arg Gln Asn Ile Glu						
53 58 63 68						
gca aac ttt att aaa cca aac ttt cag cag tta ttt aga tat tta gtc						534
Ala Asn Phe Ile Lys Pro Asn Phe Gln Gln Leu Phe Arg Tyr Leu Val						
69 74 79 84						

ctg gat att gca gat aat cca gtt gaa aat ata ata cgt ttt ttc cct	582
Leu Asp Ile Ala Asp Asn Pro Val Glu Asn Ile Ile Arg Phe Phe Pro	
85 90 95 100	
atg act aag gaa ttt att gat ggg agc tta caa atg gga gga aaa gtt	630
Met Thr Lys Glu Phe Ile Asp Gly Ser Leu Gln Met Gly Gly Lys Val	
101 106 111 116	
ctt gtg cat gga aat gca ggg atc tcc aga agt gca gcc ttt gtt att	678
Leu Val His Gly Asn Ala Gly Ile Ser Arg Ser Ala Ala Phe Val Ile	
117 122 127 132	
gca tac att atg gaa aca ttt gga atg aag tac aga gat gct ttt gct	726
Ala Tyr Ile Met Glu Thr Phe Gly Met Lys Tyr Arg Asp Ala Phe Ala	
133 138 143 148	
tat gtt caa gaa aga aga ttt tgt att aat cct aat gct gga ttt gtc	774
Tyr Val Gln Glu Arg Arg Phe Cys Ile Asn Pro Asn Ala Gly Phe Val	
149 154 159 164	
cat caa ctt cag gaa tat gaa gcc atc tac cta gca aaa tta aca ata	822
His Gln Leu Gln Glu Tyr Glu Ala Ile Tyr Leu Ala Lys Leu Thr Ile	
165 170 175 180	
cag atg atg tca cca ctc cag ata gaa agg tca tta tct gtt cat tct	870
Gln Met Met Ser Pro Leu Gln Ile Glu Arg Ser Leu Ser Val His Ser	
181 186 191 196	
ggt acc aca ggc agt ttg aag aga aca cat gaa gaa gag gat gat ttt	918
Gly Thr Thr Gly Ser Leu Lys Arg Thr His Glu Glu Glu Asp Asp Phe	
197 202 207 212	
gga acc atg caa gtg gcg act gca cag aat ggc tga cttg aagagcaaca	968
Gly Thr Met Gln Val Ala Thr Ala Gln Asn Gly *	
213 218 223	
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aaaaaaaaaa aaa	1041

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 <212> DNA
 <213> Homo sapiens

<220>
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actagtccag tgtggtggaa ttcgaatcct ccaac atg gag cct ctt gca gct	113
Met Glu Pro Leu Ala Ala	

tac ccg cta aaa tgt tcc ggg ccc aga gca aag gta ttt gca gtt ttg	161
Tyr Pro Leu Lys Cys Ser Gly Pro Arg Ala Lys Val Phe Ala Val Leu	
7 12 17 22	
ctg tct ata gtt cta tgc aca gta acg cta ttt ctt cta caa cta aaa	209
Leu Ser Ile Val Leu Cys Thr Val Thr Leu Phe Leu Leu Gln Leu Lys	
23 28 33 38	
ttc ctc aaa cct aaa atc aac agc ttt tat gcc ttt gaa gtg aag gat	257
Phe Leu Lys Pro Lys Ile Asn Ser Phe Tyr Ala Phe Glu Val Lys Asp	
39 44 49 54	
gca aaa gga aga act gtt tct ctg gaa aag tat aaa ggc aaa gtt tca	305
Ala Lys Gly Arg Thr Val Ser Leu Glu Lys Tyr Lys Gly Lys Val Ser	
55 60 65 70	
cta gtt gta aac gtg gcc agt gac tgc caa ctc aca gac aga aat tac	353
Leu Val Val Asn Val Ala Ser Asp Cys Gln Leu Thr Asp Arg Asn Tyr	
71 76 81 86	
tta ggg ctg aag gaa ctg cac aaa gag ttt gga cca tcc cac ttc agc	401
Leu Gly Leu Lys Glu Leu His Lys Glu Phe Gly Pro Ser His Phe Ser	
87 92 97 102	
gtg ttg gct ttt ccc tgc aat cag ttt gga gaa tcg gag ccc cgc cca	449
Val Leu Ala Phe Pro Cys Asn Gln Phe Gly Glu Ser Glu Pro Arg Pro	
103 108 113 118	
agc aag gaa gta gaa tct ttt gca aga aaa aac tac gga gta act ttc	497
Ser Lys Glu Val Glu Ser Phe Ala Arg Lys Asn Tyr Gly Val Thr Phe	
119 124 129 134	
ccc atc ttc cac aag att aag att cta gga tct gaa gga gaa cct gca	545
Pro Ile Phe His Lys Ile Lys Ile Leu Gly Ser Glu Gly Glu Pro Ala	
135 140 145 150	
ttt aga ttt ctt gtt gat tct tca aag aag gaa cca agg tgg aat ttt	593
Phe Arg Phe Leu Val Asp Ser Ser Lys Lys Glu Pro Arg Trp Asn Phe	
151 156 161 166	
tgg aag tat ctt gtc aac cct gag ggt caa gtt gtg aag ttc tgg agg	641
Trp Lys Tyr Leu Val Asn Pro Glu Gly Gln Val Val Lys Phe Trp Arg	
167 172 177 182	
cca gag gag ccc att gaa gtc atc agg cct gac ata gca gct ctg gtt	689
Pro Glu Glu Pro Ile Glu Val Ile Arg Pro Asp Ile Ala Ala Leu Val	
183 188 193 198	
aga caa gtg atc ata aaa aag aaa gag gat cta tga gaat gccattgcgt	739
Arg Gln Val Ile Ile Lys Lys Lys Glu Asp Leu *	
199 204 209	
ttctaataga acagagaaat gtctccatga gggtttggtc tcatttttaa ctttttttt	799
ttggagacag tgtctcactc tgtcaccag gctggagtgc agtagtgcgt tctcagctca	859


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ttgcaacctc tgccttttta aacatgctat taaatgtggc aatgaaggat ttttttttaa 919
tggtatcttg ctattaagtg gtaatgaatg ttcccaggat gaggatgtta cccaaagcaa 979
aaatcaagag tagccaaaga atcaacatga aatatattaa ctacttcctc tgaccatact 1039
aaagaattca gaatacacag tgaccaatgt gcctcaatat cttattgttc aacttgacat 1099
tttctaggac tgtacttgat gaaaatgcc aacactaga ccactcttg gattcaagag 1159
cactgtgtat gactgaaatt tctggaataa ctgtaaattg ttatgttaat ggaataaaac 1219
acaaatgttg aaaaatgtaa aatatatata catagattca aatccttata tatgtatgct 1279
tgttttgtgt acaggatttt gttttttctt ttttaagtaca gggttcctagt gttttactat 1339
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aacatttgaa aaaaaaaaaa 1417

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<210> 784
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<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (58) .. (636)

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atg agc ccg cgg cgg acc ctc ccg cgc ccc ctc tcg ctc tgc ctc tcc 105
Met Ser Pro Arg Arg Thr Leu Pro Arg Pro Leu Ser Leu Cys Leu Ser
1 5 10 15

ctc tgc ctc tgc ctc tgc ctg gcc gcg gct ctg gga agt gcg cag tcc 153
Leu Cys Leu Cys Leu Cys Leu Ala Ala Ala Leu Gly Ser Ala Gln Ser
17 22 27 32

ggg tcg tgt agg gat aaa aag aac tgt aag gtg gtc ttt tcc cag cag 201
Gly Ser Cys Arg Asp Lys Lys Asn Cys Lys Val Val Phe Ser Gln Gln
33 38 43 48

gaa ctg agg aag cgg cta aca ccc ctg cag tac cat gtc act cag gag 249
Glu Leu Arg Lys Arg Leu Thr Pro Leu Gln Tyr His Val Thr Gln Glu
49 54 59 64

aaa ggg acc gaa agt gcc ttt gaa gga gaa tac aca cat cac aaa gat 297
Lys Gly Thr Glu Ser Ala Phe Glu Gly Glu Tyr Thr His His Lys Asp
65 70 75 80

cct gga ata tat aaa tgt gtt gtt tgt gga act cca ttg ttt aag tca 345
Pro Gly Ile Tyr Lys Cys Val Val Cys Gly Thr Pro Leu Phe Lys Ser

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81	86	91	96	
gaa acc aaa ttt gac	tcc ggt tca ggt tgg	cct tca ttc cac gat	gtg	393
Glu Thr Lys Phe Asp	Ser Gly Ser Gly Trp	Pro Ser Phe His Asp	Val	
97	102	107	112	
atc aat tct gag gca	atc aca ttc aca gat	gac ttt tcc tat ggg	atg	441
Ile Asn Ser Glu Ala	Ile Thr Phe Thr Asp	Asp Phe Ser Tyr Gly	Met	
113	118	123	128	
cac agg gtg gaa aca	agc tgc tct cag tgt	ggg gct cac ctt ggg	cac	489
His Arg Val Glu Thr	Ser Cys Ser Gln Cys	Gly Ala His Leu Gly	His	
129	134	139	144	
att ttt gat gat ggg	cct cgt cca act ggg	aaa aga tac tgc ata	aat	537
Ile Phe Asp Asp Gly	Pro Arg Pro Thr Gly	Lys Arg Tyr Cys Ile	Asn	
145	150	155	160	
tcg gct gcc ttg tct	ttt aca cct gcg gat	agc agt ggc acc gcc	gag	585
Ser Ala Ala Leu Ser	Phe Thr Pro Ala Asp	Ser Ser Gly Thr Ala	Glu	
161	166	171	176	
gga ggc agt ggg gtc	gcc agc ccg gcc cag	gca gac aaa gcg gag	ctc	633
Gly Gly Ser Gly Val	Ala Ser Pro Ala Gln	Ala Asp Lys Ala Glu	Leu	
177	182	187	192	
tag agta atggagagt	atggaaacaa agtgtactta	atgcacagct tatta	aaaaaa	690
*				
193				
atcaaaattg ttaaaaaaaa aaaaa				715

<210> 785
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (188) .. (745)

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ccgcgcccccc tctcgctctg cctctccctc tgccctctgcc tctgcctggc cgcggctctg	120
ggaagtgcgc agtccgctct tgcccctgtt ctttgcttct cgttttgttg gagaagatat	180
cacagtg atg tct gca ttc aac ctg ctg cat ttg gtg aca aag agc cag	229
Met Ser Ala Phe Asn Leu Leu His Leu Val Thr Lys Ser Gln	
1 5 10	
cca gta gcc ctt cga gcc tgt ggg ctt ccc tca ggg tcg tgt agg gat	277
Pro Val Ala Leu Arg Ala Cys Gly Leu Pro Ser Gly Ser Cys Arg Asp	

15	20	25	30	
aaa aag aac tgt aag gtg gtc ttt tcc cag cac gaa ctg agg aag cgg				325
Lys Lys Asn Cys Lys Val Val Phe Ser Gln His Glu Leu Arg Lys Arg				
31	36	41	46	
cta aca ccc ctg cag tac cat gtc act cag gag aaa ggg acc gaa agt				373
Leu Thr Pro Leu Gln Tyr His Val Thr Gln Glu Lys Gly Thr Glu Ser				
47	52	57	62	
gcc ttt gaa gga gaa tac aca cat cac aaa gat cct gga ata tat aaa				421
Ala Phe Glu Gly Glu Tyr Thr His His Lys Asp Pro Gly Ile Tyr Lys				
63	68	73	78	
tgt gtt gtt tgt gga act cca ttg ttt aag tca gaa acc aaa ttt gac				469
Cys Val Val Cys Gly Thr Pro Leu Phe Lys Ser Glu Thr Lys Phe Asp				
79	84	89	94	
tcc ggt tca ggt tgg cct tca ttc cac gat gtg atc aat tct gag gca				517
Ser Gly Ser Gly Trp Pro Ser Phe His Asp Val Ile Asn Ser Glu Ala				
95	100	105	110	
atc aca ttc aca gat gac ttt tcc tat ggg atg cac agg gtg gaa aca				565
Ile Thr Phe Thr Asp Asp Phe Ser Tyr Gly Met His Arg Val Glu Thr				
111	116	121	126	
agc tgc tct cag tgt ggt gct cac ctt ggg cac att ttt gat gat ggg				613
Ser Cys Ser Gln Cys Gly Ala His Leu Gly His Ile Phe Asp Asp Gly				
127	132	137	142	
cct cgt cca act ggg aaa aga tac tgc ata aat tgc gct gcc ttg tct				661
Pro Arg Pro Thr Gly Lys Arg Tyr Cys Ile Asn Ser Ala Ala Leu Ser				
143	148	153	158	
ttt aca cct gcg gat agc agt ggc acc gcc gag gga ggc agt ggg gtc				709
Phe Thr Pro Ala Asp Ser Ser Gly Thr Ala Glu Gly Gly Ser Gly Val				
159	164	169	174	
gcc agc ccg gcc cag gca gac aaa gcg gag ctc tag agta atggagagtg				759
Ala Ser Pro Ala Gln Ala Asp Lys Ala Glu Leu *				
175	180	185		
atggaaacaa agtgtactta atgcacagct tattaacaaa atcaaaattg ttatcttaat				819
agatatatatt tttcaaaaac tataagggca gttttgtgct attgatattt tttcttcttt				879
tgcttaaaca gaagccctgg ccatccatgt attttgcaat tgactagatc aagaactgtt				939
tatagcttta gcaaatggag acagctttgt gaaacttctt cacaagccac ttataccctt				999
tggcattctt ttctttgagc acatggcttc ttttgagtt tttccccct tgattcagaa				1059
gca				1062

<210> 786
 <211> 1032
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (62)..(862)

<400> 786

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gcacgagacc gtatccgcta ggcgggcctg ggatgcgctt gggctccctg ttcgttccca      60
c   atg cag ggc agc aca agg aga atg ggc gtc atg act gat gtc cac      106
    Met Gln Gly Ser Thr Arg Arg Met Gly Val Met Thr Asp Val His
      1             5             10

cgg cgc ttc ctc cag ttg ctg atg acc cat ggc gtg cta gag gaa tgg      154
Arg Arg Phe Leu Gln Leu Leu Met Thr His Gly Val Leu Glu Glu Trp
  16             21             26             31

gac gtg aag cgc ttg cag acg cac tgc tac aag gtc cat gac cgc aat      202
Asp Val Lys Arg Leu Gln Thr His Cys Tyr Lys Val His Asp Arg Asn
  32             37             42             47

gcc acc gta gat aag ttg gag gac ttc atc aac aac att aac agt gtc      250
Ala Thr Val Asp Lys Leu Glu Asp Phe Ile Asn Asn Ile Asn Ser Val
  48             53             58             63

ttg gag tcc ttg tat att gag ata aag aga gga gtc acg gaa gat gat      298
Leu Glu Ser Leu Tyr Ile Glu Ile Lys Arg Gly Val Thr Glu Asp Asp
  64             69             74             79

ggg aga ccc att tat gcg ttg gtg aat ctt gct aca act tca att tcc      346
Gly Arg Pro Ile Tyr Ala Leu Val Asn Leu Ala Thr Thr Ser Ile Ser
  80             85             90             95

aaa atg gct acg gat ttt gca gag aat gaa ctg gat ttg ttt aga aag      394
Lys Met Ala Thr Asp Phe Ala Glu Asn Glu Leu Asp Leu Phe Arg Lys
  96             101            106            111

gct ctg gaa ctg att att gac tca gaa acc ggc ttt gcg tct tcc aca      442
Ala Leu Glu Leu Ile Ile Asp Ser Glu Thr Gly Phe Ala Ser Ser Thr
  112            117            122            127

aac ata ttg aac ctg gtt gat caa ctt aaa ggc aag aag atg agg aag      490
Asn Ile Leu Asn Leu Val Asp Gln Leu Lys Gly Lys Lys Met Arg Lys
  128            133            138            143

aag gaa gcg gag cag gtg ctg cag aag ttt gtt caa aac aag tgg ctg      538
Lys Glu Ala Glu Gln Val Leu Gln Lys Phe Val Gln Asn Lys Trp Leu
  144            149            154            159

att gag aag gaa ggg gag ttc acc ctg cac ggc cgg gcc atc ctg gag      586
Ile Glu Lys Glu Gly Glu Phe Thr Leu His Gly Arg Ala Ile Leu Glu
  160            165            /170            175

atg gag caa tac atc cgg gag acg tac ccc gac gcg gtg aag atc tgc      634
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Met Glu Gln Tyr Ile Arg Glu Thr Tyr Pro Asp Ala Val Lys Ile Cys	
176 181 186 191	
aat atc tgt cac agc ctc ctc atc cag ggt caa agc tgc gaa acc tgt	682
Asn Ile Cys His Ser Leu Leu Ile Gln Gly Gln Ser Cys Glu Thr Cys	
192 197 202 207	
ggg atc agg atg cac tta ccc tgc gtg gcc aag tac ttc cag tgc aat	730
Gly Ile Arg Met His Leu Pro Cys Val Ala Lys Tyr Phe Gln Ser Asn	
208 213 218 223	
gct gaa ccg cgc tgc ccc cac tgc aac gac tac tgg ccc cac gag atc	778
Ala Glu Pro Arg Cys Pro His Cys Asn Asp Tyr Trp Pro His Glu Ile	
224 229 234 239	
cca aaa gtc ttc gac cct gag aag gag agg gag tct ggt gtc ttg aaa	826
Pro Lys Val Phe Asp Pro Glu Lys Glu Arg Glu Ser Gly Val Leu Lys	
240 245 250 255	
tcg aac aaa aag tcc ctg cgg tcc agg cag cat tag ccat cgtgccctgc	876
Ser Asn Lys Lys Ser Leu Arg Ser Arg Gln His *	
256 261 266	
tgaggggctg gctgccttga gtggcctgat cgccacagcc cttcttgga gaaaggcgtc	936
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ggaataaaacc atcctgggaa gttaaaaaaaaa aaaaaa	1032
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ctcaggtggc tgcgtgtctg cgcc atg gtt gac att ctg ggc gag cgg cac	111
Met Val Asp Ile Leu Gly Glu Arg His	
1 5	
ctg gtg acc tgt aag ggc gcg acg gtg gag gcc gag gcg gcg ctg cag	159
Leu Val Thr Cys Lys Gly Ala Thr Val Glu Ala Glu Ala Ala Leu Gln	
10 15 20 25	
aac aag gtg gtg gca ctg tac ttc gcg gcg gcc cgg tgc gcg ccg agc	207
Asn Lys Val Val Ala Leu Tyr Phe Ala Ala Ala Arg Cys Ala Pro Ser	
26 / 31 36 41	
cgc gac ttc acg ccg ctg ctc tgc gac ttc tat acg gcg ctg gtg gcc	255

Arg	Asp	Phe	Thr	Pro	Leu	Leu	Cys	Asp	Phe	Tyr	Thr	Ala	Leu	Val	Ala		
42					47					52					57		
gag gcg cgg cgg ccc gcg ccc ttc gaa gtg gtc ttc gtg tca gcc gac																	303
Glu	Ala	Arg	Arg	Pro	Ala	Pro	Phe	Glu	Val	Val	Phe	Val	Ser	Ala	Asp		
58					63					68					73		
ggc agc tcc cag gag atg ctg gac ttc atg cgc gag ctg cat ggc gcc																	351
Gly	Ser	Ser	Gln	Glu	Met	Leu	Asp	Phe	Met	Arg	Glu	Leu	His	Gly	Ala		
74					79					84					89		
tgg ctg gcg ctg ccc ttc cac gac ccc tac cgg cat gag ctg agg aag																	399
Trp	Leu	Ala	Leu	Pro	Phe	His	Asp	Pro	Tyr	Arg	His	Glu	Leu	Arg	Lys		
90					95					100					105		
agg tac aac gtc aca gcc atc ccc aag ctt gtg att gtg aaa caa aat																	447
Arg	Tyr	Asn	Val	Thr	Ala	Ile	Pro	Lys	Leu	Val	Ile	Val	Lys	Gln	Asn		
106					111					116					121		
ggg gag gtc atc acc aac aaa ggg cgg aag cag atc cgg gaa cgg ggg																	495
Gly	Glu	Val	Ile	Thr	Asn	Lys	Gly	Arg	Lys	Gln	Ile	Arg	Glu	Arg	Gly		
122					127					132					137		
ttg gcc tgc ttc cag gac tgg gtg gag gcg gcc gat atc ttc cag aat																	543
Leu	Ala	Cys	Phe	Gln	Asp	Trp	Val	Glu	Ala	Ala	Asp	Ile	Phe	Gln	Asn		
138					143					148					153		
ttc tcc gtt tga agt gggagggacc tcagagggcc aggacaggtg ctgcttctcc																	598
Phe	Ser	Val	*														
154																	
agcaccgacg ctggggcaaa gaggagcatg ttgggttctt tctctgttg gtgtgatttc																	658
attgtatttc agagcagaag cactaagctg tgggtcaaaaa gcaactattg ctcaggaaat																	718
aatacactcc atattttgat catgcaggct gtttgtatta tagttatttt tgttattctt																	778
tgcatacctt tatccacctg tgcttaagga aggatcctca tatgttcata ctgagctgtt																	838
ggaaatctat gcaagacatt tatttgtaca agtctcttca ggtaaaataa tatatttatt																	898
gataacattt tctggcgatc tgtttatttt aatggtagtc tttcacaact atcttaataa																	958
agtttgcaag ctgtgtactt taaaaaaaaaaa aaa																	991

<210> 788
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 <212> DNA
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<220>
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 <222> (109) .. (915)

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aagcggccta cggctgcgag aagacgacag aaggggggcag ccaccata atg ata cta      117
                                   Met Ile Leu
                                   1

tat gtg tcc aag cta aac aaa atc att cac ttc cct gat ttt gat aag      165
Tyr Val Ser Lys Leu Asn Lys Ile Ile His Phe Pro Asp Phe Asp Lys
  4                      9                      14                      19

aaa att cct gta aag ctg ttt cct ctg cct ctc ctc tac gtt gga aac      213
Lys Ile Pro Val Lys Leu Phe Pro Leu Pro Leu Leu Tyr Val Gly Asn
  20                      25                      30                      35

cac ata agt gga tta tca agc aca agt aaa tta agc cta ccg atg ttc      261
His Ile Ser Gly Leu Ser Ser Thr Ser Lys Leu Ser Leu Pro Met Phe
  36                      41                      46                      51

acc gtg ctc agg aaa ttc acc att cca ctt acc tta ctt ctg gaa acc      309
Thr Val Leu Arg Lys Phe Thr Ile Pro Leu Thr Leu Leu Leu Glu Thr
  52                      57                      62                      67

atc ata ctt ggg aag cag tat tca ctc aac atc atc ctc agt gtc ttt      357
Ile Ile Leu Gly Lys Gln Tyr Ser Leu Asn Ile Ile Leu Ser Val Phe
  68                      73                      78                      83

gcc att att ctc ggg gct ttc ata gca gct ggg tct gac ctt gct ttt      405
Ala Ile Ile Leu Gly Ala Phe Ile Ala Ala Gly Ser Asp Leu Ala Phe
  84                      89                      94                      99

aac tta gaa ggc tat att ttt gta ttc ctg aat gat atc ttc aca gca      453
Asn Leu Glu Gly Tyr Ile Phe Val Phe Leu Asn Asp Ile Phe Thr Ala
 100                      105                      110                      115

gca aat gga gtt tat acc aaa cag aaa atg gac cca aag gag cta ggg      501
Ala Asn Gly Val Tyr Thr Lys Gln Lys Met Asp Pro Lys Glu Leu Gly
 116                      121                      126                      131

aaa tac gga gta ctt ttc tac aat gcc tgc ttc atg att atc cca act      549
Lys Tyr Gly Val Leu Phe Tyr Asn Ala Cys Phe Met Ile Ile Pro Thr
 132                      137                      142                      147

ctt att att agt gtc tcc act gga gac ctg caa cag gct act gaa ttc      597
Leu Ile Ile Ser Val Ser Thr Gly Asp Leu Gln Gln Ala Thr Glu Phe
 148                      153                      158                      163

aac caa tgg aag aat gtt gtg ttt atc cta cag ttt ctt ctt tcc tgt      645
Asn Gln Trp Lys Asn Val Val Phe Ile Leu Gln Phe Leu Leu Ser Cys
 164                      169                      174                      179

ttt ttg ggg ttt ctg ctg atg tac tcc acg gtt ctg tgc agc tat tac      693
Phe Leu Gly Phe Leu Leu Met Tyr Ser Thr Val Leu Cys Ser Tyr Tyr
 180                      185                      190                      195

aat tca gcc ctg acg aca gca gtg gtt gga gcc atc aag aat gta tcc      741
Asn Ser Ala Leu Thr Thr Ala Val Val Gly Ala Ile Lys Asn Val Ser

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196	201	206	211	
gtt gcc tac att ggg ata tta atc ggt gga gac tac att ttc tct ttg				789
Val Ala Tyr Ile Gly Ile Leu Ile Gly Gly Asp Tyr Ile Phe Ser Leu				
212	217	222	227	
tta aac ttt gta ggg tta aat att tgc atg gca ggg ggc ttg aga tat				837
Leu Asn Phe Val Gly Leu Asn Ile Cys Met Ala Gly Gly Leu Arg Tyr				
228	233	238	243	
tcc ttt tta aca ctg agc agc cag tta aaa cct aaa cct gtg ggt gaa				885
Ser Phe Leu Thr Leu Ser Ser Gln Leu Lys Pro Lys Pro Val Gly Glu				
244	249	254	259	
gaa aac atc tgt ttg gat ttg aag agc taa a gactctgcag caggattgga				936
Glu Asn Ile Cys Leu Asp Leu Lys Ser *				
260	265			
gactgacttg tgactgcggg ctgggggggc attcccagta ggaatgtgaa gccagagggt				996
tcggattcgt gacatccacc ccctgggcaa gtgagagcat ctgcaaaatg caaagagaac				1056
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gttaactgcc agtaaagtta tttgttagct ttgatgaaag ctatgttggt atctttccct				1416
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	Met Ile Leu
	1
tat gtg tcc aag cta aac aaa atc att cac ttc cct gat ttt gat aag	165
Tyr Val Ser Lys Leu Asn Lys Ile Ile His Phe Pro Asp Phe Asp Lys	

4	9	14	19	
aaa att cct gta aag ctg ttt cct ctg cct ctc ctc tac gtt gga aac				213
Lys Ile Pro Val Lys Leu Phe Pro Leu Pro Leu Leu Tyr Val Gly Asn				
20	25	30	35	
cac ata agt gga tta tca agc aca agt aaa tta aga gat agc att tca				261
His Ile Ser Gly Leu Ser Ser Thr Ser Lys Leu Arg Asp Ser Ile Ser				
36	41	46	51	
cca tgt tgc cca ggc tgg tct cga act cca cca tgc cca gcc agc cta				309
Pro Cys Cys Pro Gly Trp Ser Arg Thr Pro Pro Cys Pro Ala Ser Leu				
52	57	62	67	
ccg atg ttc acc gtg ctc agg aaa ttc acc att cca ctt acc tta ctt				357
Pro Met Phe Thr Val Leu Arg Lys Phe Thr Ile Pro Leu Thr Leu Leu				
68	73	78	83	
ctg gaa acc atc ata ctt ggg aag cag tat tca ctc aac atc atc ctc				405
Leu Glu Thr Ile Ile Leu Gly Lys Gln Tyr Ser Leu Asn Ile Ile Leu				
84	89	94	99	
agt gtc ttt gcc att att ctc ggg gct ttc ata gca gct ggg tct gac				453
Ser Val Phe Ala Ile Ile Leu Gly Ala Phe Ile Ala Ala Gly Ser Asp				
100	105	110	115	
ctt gct ttt aac tta gaa ggc tat att ttt gta ttc ctg aat gat atc				501
Leu Ala Phe Asn Leu Glu Gly Tyr Ile Phe Val Phe Leu Asn Asp Ile				
116	121	126	131	
ttc aca gca gca aat gga gtt tat acc aaa cag aaa atg gac cca aag				549
Phe Thr Ala Ala Asn Gly Val Tyr Thr Lys Gln Lys Met Asp Pro Lys				
132	137	142	147	
gag cta ggg aaa tac gga gta ctt ttc tac aat gcc tgc ttc atg att				597
Glu Leu Gly Lys Tyr Gly Val Leu Phe Tyr Asn Ala Cys Phe Met Ile				
148	153	158	163	
atc cca act ctt att att agt gtc tcc act gga gac ctg caa cag gct				645
Ile Pro Thr Leu Ile Ile Ser Val Ser Thr Gly Asp Leu Gln Gln Ala				
164	169	174	179	
act gaa ttc aac caa tgg aag aat gtt gtg ttt atc cta cag ttt ctt				693
Thr Glu Phe Asn Gln Trp Lys Asn Val Val Phe Ile Leu Gln Phe Leu				
180	185	190	195	
ctt tcc tgt ttt ttg ggg ttt ctg ctg atg tac tcc acg gtt ctg tgc				741
Leu Ser Cys Phe Leu Gly Phe Leu Leu Met Tyr Ser Thr Val Leu Cys				
196	201	206	211	
agc tat tac aat tca gcc ctg acg aca gca gtg gtt gga gcc atc aag				789
Ser Tyr Tyr Asn Ser Ala Leu Thr Thr Ala Val Val Gly Ala Ile Lys				
212	217	222	227	
aat gta tcc gtt gcc tac att ggg ata tta atc ggt gga gac tac att				837
Asn Val Ser Val Ala Tyr Ile Gly Ile Leu Ile Gly Gly Asp Tyr Ile				
228	233	238	243	

ttc tct ttg tta aac ttt gta ggg tta aat att tgc atg gca ggg ggc	885
Phe Ser Leu Leu Asn Phe Val Gly Leu Asn Ile Cys Met Ala Gly Gly	
244 249 254 259	
ttg aga tat tcc ttt tta aca ctg agc agc cag tta aaa cct aaa cct	933
Leu Arg Tyr Ser Phe Leu Thr Leu Ser Ser Gln Leu Lys Pro Lys Pro	
260 265 270 275	
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Val Gly Glu Glu Asn Ile Cys Leu Asp Leu Lys Ser *	
276 281 286	
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Met Ile Leu	
1	
tat gtg tcc aag cta aac aaa atc att cac ttc cct gat ttt gat aag	165
Tyr Val Ser Lys Leu Asn Lys Ile Ile His Phe Pro Asp Phe Asp Lys	
4 9 14 19	
aaa att cct gta aag ctg ttt cct ctg cct ctc ctc tac gtt gga aac	213
Lys Ile Pro Val Lys Leu Phe Pro Leu Pro Leu Leu Tyr Val Gly Asn	
20 25 30 35	

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Met Ile Leu
1
tat gtg tcc aag cta aac aaa atc att cac ttc cct gat ttt gat aag 165
Tyr Val Ser Lys Leu Asn Lys Ile Ile His Phe Pro Asp Phe Asp Lys
4 9 14 19
aaa att cct gta aag ctg ttt cct ctg cct ctc ctc tac gtt gga aac 213
Lys Ile Pro Val Lys Leu Phe Pro Leu Pro Leu Leu Tyr Val Gly Asn
20 25 30 35
cac ata agt gga tta tca agc aca agt aaa tta agc cta ccg atg ttc 261
His Ile Ser Gly Leu Ser Ser Thr Ser Lys Leu Ser Leu Pro Met Phe
36 41 46 51
acc gtg ctc agg aaa ttc acc att cca ctt acc tta ctt ctg gaa acc 309
Thr Val Leu Arg Lys Phe Thr Ile Pro Leu Thr Leu Leu Leu Glu Thr
52 57 62 67
atc ata ctt ggg aag cag tat tca ctc aac atc atc ctc agt gtc ttt 357
Ile Ile Leu Gly Lys Gln Tyr Ser Leu Asn Ile Ile Leu Ser Val Phe
68 73 78 83
gcc att att ctc ggg gct ttc ata gca gct ggg tct gac ctt gct ttt 405
Ala Ile Ile Leu Gly Ala Phe Ile Ala Ala Gly Ser Asp Leu Ala Phe
84 89 94 99
aac tta gaa ggc tat att ttt gta ttc ctg aat gat atc ttc aca gca 453
Asn Leu Glu Gly Tyr Ile Phe Val Phe Leu Asn Asp Ile Phe Thr Ala
100 105 110 115

gca aat gga gtt tat acc aaa cag aaa atg gac cca aag gag cta ggg	501
Ala Asn Gly Val Tyr Thr Lys Gln Lys Met Asp Pro Lys Glu Leu Gly	
116 121 126 131	
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Lys Tyr Gly Val Leu Phe Tyr Asn Ala Cys Phe Met Ile Ile Pro Thr	
132 137 142 147	
ctt att att agt gtc tcc act gga gac ctg caa cag gct act gaa ttc	597
Leu Ile Ile Ser Val Ser Thr Gly Asp Leu Gln Gln Ala Thr Glu Phe	
148 153 158 163	
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Asn Gln Trp Lys Asn Val Val Phe Ile Leu Gln Phe Leu Leu Ser Cys	
164 169 174 179	
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Phe Leu Gly Phe Leu Leu Met Tyr Ser Thr Val Leu Cys Ser Tyr Tyr	
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aat tca gcc ctg acg aca gca gtg gtt gga gcc atc aag cat ggc agg	741
Asn Ser Ala Leu Thr Thr Ala Val Val Gly Ala Ile Lys His Gly Arg	
196 201 206 211	
ggg ctt gag ata ttc ctt ttt aac act gag cag cca gtt aaa acc taa	789
Gly Leu Glu Ile Phe Leu Phe Asn Thr Glu Gln Pro Val Lys Thr *	
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gtcggccaaa cgcaccctat tgctgg atg gca tgg gaa ccc tcc ttg gga gcc	2333
Met Ala Trp Glu Pro Ser Leu Gly Ala	
1 5	
ttc tat ggg cca gcc agc ttc agc act ttt gta aac tgc atg tac ttt	2381
Phe Tyr Gly Pro Ala Ser Phe Ser Thr Phe Val Asn Cys Met Tyr Phe	
10 15 20 25	
ctg agc ata ttt att cag ttg aaa aga cac cct gag cgc aaa tat gag	2429
Leu Ser Ile Phe Ile Gln Leu Lys Arg His Pro Glu Arg Lys Tyr Glu	
26 31 36 41	
ctt aag gag ccc acg gag gag caa cag aga ttg gca gcc aat gaa aat	2477
Leu Lys Glu Pro Thr Glu Glu Gln Gln Arg Leu Ala Ala Asn Glu Asn	
42 47 52 57	
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Gly Glu Ile Asn His Gln Asp Ser Met Ser Leu Ser Leu Ile Ser Thr	
58 63 68 73	
tca gcc ttg gaa aat gag cac act ttt cat tct cag ctc ttg ggg gcc	2573
Ser Ala Leu Glu Asn Glu His Thr Phe His Ser Gln Leu Leu Gly Ala	
74 79 84 89	
agc ctt act ttg ctc tta tat gtt gca ctg tgg atg ttt ggg gct ttg	2621
Ser Leu Thr Leu Leu Leu Tyr Val Ala Leu Trp Met Phe Gly Ala Leu	
90 95 100 105	
gct gtt tct ttg tat tac cct ttg gac ttg gtt ttt agc ttc gtt ttt	2669
Ala Val Ser Leu Tyr Tyr Pro Leu Asp Leu Val Phe Ser Phe Val Phe	
106 111 116 121	
gga gcc aca agt tta agc ttc agt gcg ttc ttc gtg gtc cac cat tgt	2717
Gly Ala Thr Ser Leu Ser Phe Ser Ala Phe Phe Val Val His His Cys	

122	127	132	137	
gtt aat agg gag gat	gtt aga ctt gcg tgg atc atg act tgc tgc cca			2765
Val Asn Arg Glu Asp	Val Arg Leu Ala Trp Ile Met Thr Cys Cys Pro			
138	143	148	153	
gga cgg agc tcg tat	tca gtg caa gtc aac gtc cag ccc ccc aac tct			2813
Gly Arg Ser Ser Tyr	Ser Val Gln Val Asn Val Gln Pro Pro Asn Ser			
154	159	164	169	
aat ggg acg aat gga	gag gca ccc aaa tgc ccc aat agc agt gcg gag			2861
Asn Gly Thr Asn Gly	Glu Ala Pro Lys Cys Pro Asn Ser Ser Ala Glu			
170	175	180	185	
tct tca tgc aca aac	aaa agt gct tca agc ttc aaa aat tcc tcc cag			2909
Ser Ser Cys Thr Asn	Lys Ser Ala Ser Ser Phe Lys Asn Ser Ser Gln			
186	191	196	201	
ggc tgc aaa tta aca	aac ttg cag gcg gct gca gct cag tgc cat gcc			2957
Gly Cys Lys Leu Thr	Asn Leu Gln Ala Ala Ala Gln Cys His Ala			
202	207	212	217	
aat tct tta cct ttg	aac tcc acc cct cag ctt gat aat agt ctg aca			3005
Asn Ser Leu Pro Leu	Asn Ser Thr Pro Gln Leu Asp Asn Ser Leu Thr			
218	223	228	233	
gaa cat tca atg gac	aat gat att aaa atg cac gtg gcg cct tta gaa			3053
Glu His Ser Met Asp	Asn Asp Ile Lys Met His Val Ala Pro Leu Glu			
234	239	244	249	
gtt cag ttt cga aca	aat gtg cac tca agc cgc cac cat aaa aac aga			3101
Val Gln Phe Arg Thr	Asn Val His Ser Ser Arg His His Lys Asn Arg			
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agt aaa gga cac cgg	gca agc cga ctc aca gtc ctg aga gaa tat gcc			3149
Ser Lys Gly His Arg	Ala Ser Arg Leu Thr Val Leu Arg Glu Tyr Ala			
266	271	276	281	
tac gat gtc cca acg	agc gtg gaa gga agc gtg cag aac ggc tta cct			3197
Tyr Asp Val Pro Thr	Ser Val Glu Gly Ser Val Gln Asn Gly Leu Pro			
282	287	292	297	
aaa agc cgg ctg ggc	aat aac gaa gga cac tcg agg agc cga aga gct			3245
Lys Ser Arg Leu Gly	Asn Asn Glu Gly His Ser Arg Ser Arg Arg Ala			
298	303	308	313	
tat tta gcc tac aga	gag aga cag tac aac cca ccc cag caa gac agc			3293
Tyr Leu Ala Tyr Arg	Glu Arg Gln Tyr Asn Pro Pro Gln Gln Asp Ser			
314	319	324	329	
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Ser Asp Ala Cys Ser	Thr Leu Pro Lys Ser Ser Arg Asn Phe Glu Lys			
330	335	340	345	
cca gtt tca acc act	agt aaa aaa gat gcg tta agg aag cca gct gtg			3389
Pro Val Ser Thr Thr	Ser Lys Lys Asp Ala Leu Arg Lys Pro Ala Val			
346	351	356	361	

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 362 367 372 377

cag aat gga cca att aaa agc aat ggg cag gag gga ccc ttg ctc ggt 3485
 Gln Asn Gly Pro Ile Lys Ser Asn Gly Gln Glu Gly Pro Leu Leu Gly
 378 383 388 393

acc gat agc act ggc aat gtt agg act gga tta tgg aaa cac gaa act 3533
 Thr Asp Ser Thr Gly Asn Val Arg Thr Gly Leu Trp Lys His Glu Thr
 394 399 404 409

act gtg taa cattgct gggcttccta ggcagaaatt catataaact gtgataactca 3589
 Thr Val *
 410

cattccttga agctatgagc atttaaaaaac tgtttacagc caccataggg attcaaaaga 3649

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ataaagagag tgggtgtgccc agccttctctg tatcggttaac aagcattaaa gaggagccca 180

aagaggccaa gcacacctgat tctcaatca atg gag gag agc aag ctg aaa aat 233
 Met Glu Glu Ser Lys Leu Lys Asn
 1 5

gat gat cga aag act cct gtg aac tgg aag gac tct cgg gga aca aga 281
 Asp Asp Arg Lys Thr Pro Val Asn Trp Lys Asp Ser Arg Gly Thr Arg
 9 14 19 24

gtg gct gtc tcc tca ccc atg agt cag cat cag tca tac ata cag tac 329
 Val Ala Val Ser Ser Pro Met Ser Gln His Gln Ser Tyr Ile Gln Tyr
 25 30 35 40

aaagtgttag ccacaaaagg ctacttactt tcttttcctt ttcctttaaa attataaata 1282
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ccctcagaaa ggctaactgt gatgatgaca ctttgggtaca atttagatgt ctatttggtg 1402
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ttgtggaaaa agtacttttg gaaggcatgg ggttgccagt accacaaaaa ctgtgttgta 1522
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tttagaagag agagacttta acgccattgc ctggttactt gttttatgct gtaatctagt 1762
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ggcaatcaga attaaaaagt tttttttttt tt 1854

<210> 794
<211> 1005
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (48) .. (917)

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Met Tyr Phe
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Leu Thr Pro Ile Leu Val Ala Ile Leu Cys Ile Leu Val Val Trp Ile
4 9 14 19
ttt aaa aat gcc gac aga agc atg gag aaa aag aag ggg gag cct aga 152
Phe Lys Asn Ala Asp Arg Ser Met Glu Lys Lys Lys Gly Glu Pro Arg
20 25 30 35
acc agg gcc gaa gct cgc ccc tgg gtg gat gaa gac tta aaa gac agc 200
Thr Arg Ala Glu Ala Arg Pro Trp Val Asp Glu Asp Leu Lys Asp Ser
36 41 46 51
agt gac ctg cac caa gca gaa gaa gat gct gat gaa tgg caa gaa tca 248
Ser Asp Leu His Gln Ala Glu Glu Asp Ala Asp Glu Trp Gln Glu Ser
52 57 62 67
gaa gaa aat gtt gaa cac atc ccc ttc tct cat aac cac tat cct gag 296
Glu Glu Asn Val Glu His Ile Pro Phe Ser His Asn His Tyr Pro Glu

68	73	78	83	
aag gaa atg gtt aag agg tct cag gaa ttt tat gaa ctt ctc aat aag				344
Lys Glu Met Val Lys Arg Ser Gln Glu Phe Tyr Glu Leu Leu Asn Lys				
84	89	94	99	
aga cgg tca gtc agg ttc ata agt aat gag caa gtc cca atg gaa gtc				392
Arg Arg Ser Val Arg Phe Ile Ser Asn Glu Gln Val Pro Met Glu Val				
100	105	110	115	
att gat aat gtc atc aga acg gca gga aca gcc ccg agt ggg gct cac				440
Ile Asp Asn Val Ile Arg Thr Ala Gly Thr Ala Pro Ser Gly Ala His				
116	121	126	131	
aca gag ccc tgg acc ttc gtg gtt gtg aag gac cca gac gtg aag cac				488
Thr Glu Pro Trp Thr Phe Val Val Val Lys Asp Pro Asp Val Lys His				
132	137	142	147	
aag att cga aag atc att gag gag gaa gag gag atc aac tac atg aaa				536
Lys Ile Arg Lys Ile Ile Glu Glu Glu Glu Glu Ile Asn Tyr Met Lys				
148	153	158	163	
agg atg gga cat cgc tgg gtc aca gac ctc aag aaa ctg agg acc aac				584
Arg Met Gly His Arg Trp Val Thr Asp Leu Lys Lys Leu Arg Thr Asn				
164	169	174	179	
tgg att aaa gag tac ttg gat act gcc cct att ttg att ctc att ttc				632
Trp Ile Lys Glu Tyr Leu Asp Thr Ala Pro Ile Leu Ile Leu Ile Phe				
180	185	190	195	
aaa caa gta cat ggt ttc gcc gca aat ggc aag aaa aaa gtc cac tac				680
Lys Gln Val His Gly Phe Ala Ala Asn Gly Lys Lys Lys Val His Tyr				
196	201	206	211	
tac aat gag atc agt gtt tcc atc gct tgt ggc atc ctg cta gct gcc				728
Tyr Asn Glu Ile Ser Val Ser Ile Ala Cys Gly Ile Leu Leu Ala Ala				
212	217	222	227	
ctg cag aat gca ggt ctg gtg act gtc act acc act cct ctc aac tgt				776
Leu Gln Asn Ala Gly Leu Val Thr Val Thr Thr Thr Pro Leu Asn Cys				
228	233	238	243	
ggc cct cga ctg agg gtg ctc ctg ggc cgc ccc gca cat gaa aag ctg				824
Gly Pro Arg Leu Arg Val Leu Leu Gly Arg Pro Ala His Glu Lys Leu				
244	249	254	259	
ctg atg ctg ctc ccc gtg ggg tac ccc agc aag gag gcc acg gtg cct				872
Leu Met Leu Leu Pro Val Gly Tyr Pro Ser Lys Glu Ala Thr Val Pro				
260	265	270	275	
gac ctc aag cgc aaa cct ctg gac cag atc atg gtg aca gtg tag gca				920
Asp Leu Lys Arg Lys Pro Leu Asp Gln Ile Met Val Thr Val *				
276	281	286		
gggcccccca agggagtggc agggagatgg cgcccctgct tttccctgag cctctcgcct				980
gctcctcttg ggtctcttgg ctgct				1005

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 <211> 2194
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (140)..(1189)

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 cttgggtgga ccatcagaa atg tct tcc tta agt gga aaa gtc caa acc gtt 172
 Met Ser Ser Leu Ser Gly Lys Val Gln Thr Val
 1 5
 ttg ggc ctt gta gag cca agc aaa ctg ggc cgt acc ctg acc cat gaa 220
 Leu Gly Leu Val Glu Pro Ser Lys Leu Gly Arg Thr Leu Thr His Glu
 12 17 22 27
 cac ctg gcc atg acc ttt gac tgc tgt tac tgt cca cct ccc ccg tgc 268
 His Leu Ala Met Thr Phe Asp Cys Cys Tyr Cys Pro Pro Pro Pro Cys
 28 33 38 43
 cag gaa gct att tcc aaa gaa cct atc gtg atg aaa aat tta tat tgg 316
 Gln Glu Ala Ile Ser Lys Glu Pro Ile Val Met Lys Asn Leu Tyr Trp
 44 49 54 59
 att cag aaa aac gcc tat tcc cat aaa gaa aac ctt caa tta aat cag 364
 Ile Gln Lys Asn Ala Tyr Ser His Lys Glu Asn Leu Gln Leu Asn Gln
 60 65 70 75
 gag aca gaa gcc ata aag gaa gaa ctg ttg tat ttt aaa gct aat ggt 412
 Glu Thr Glu Ala Ile Lys Glu Glu Leu Leu Tyr Phe Lys Ala Asn Gly
 76 81 86 91
 gga ggg gct ttg gtg gaa aac aca acc act ggg att agc cga gac aca 460
 Gly Gly Ala Leu Val Glu Asn Thr Thr Thr Gly Ile Ser Arg Asp Thr
 92 97 102 107
 cag acg ttg aag agg ctt gca gaa gag act ggc gtc cat atc ata tct 508
 Gln Thr Leu Lys Arg Leu Ala Glu Glu Thr Gly Val His Ile Ile Ser
 108 113 118 123
 gga gcc ggg ttt tat gtg gat gca act cac tcc tca gag acc agg gcc 556
 Gly Ala Gly Phe Tyr Val Asp Ala Thr His Ser Ser Glu Thr Arg Ala
 124 129 134 139
 atg tca gtg gag cag ctt acc gat gtc ctt atg aat gaa att ctc cat 604
 Met Ser Val Glu Gln Leu Thr Asp Val Leu Met Asn Glu Ile Leu His
 140 145 150 155

gga gct gat gga acc agt atc aag tgt ggc att att gga gaa att ggt Gly Ala Asp Gly Thr Ser Ile Lys Cys Gly Ile Ile Gly Glu Ile Gly 156 161 166 171	652
tgc tcc tgg cct ttg act gag agt gaa aga aag gtt ctc cag gcc aca Cys Ser Trp Pro Leu Thr Glu Ser Glu Arg Lys Val Leu Gln Ala Thr 172 177 182 187	700
gct cat gcc cag gct cag ctt ggt tgt cct gtt att atc cat cct gga Ala His Ala Gln Ala Gln Leu Gly Cys Pro Val Ile Ile His Pro Gly 188 193 198 203	748
cgg agc tcc agg gca cca ttt cag att atc cga ata ⁴ ttg caa gaa gca Arg Ser Ser Arg Ala Pro Phe Gln Ile Ile Arg Ile Leu Gln Glu Ala 204 209 214 219	796
ggc gca gac atc tcc aaa aca gtc atg tca cac ctg gat agg act att Gly Ala Asp Ile Ser Lys Thr Val Met Ser His Leu Asp Arg Thr Ile 220 225 230 235	844
ctt gat aag aaa gag ctc ttg gag ttt gct caa ctt ggc tgc tac ttg Leu Asp Lys Lys Glu Leu Leu Glu Phe Ala Gln Leu Gly Cys Tyr Leu 236 241 246 251	892
gaa tat gat ctc ttt ggt act gaa cta ctt cat tac caa ctc ggc cca Glu Tyr Asp Leu Phe Gly Thr Glu Leu Leu His Tyr Gln Leu Gly Pro 252 257 262 267	940
gat att gac atg cct gat gat aac aaa aga att aga agg gtg cgt ctc Asp Ile Asp Met Pro Asp Asp Asn Lys Arg Ile Arg Arg Val Arg Leu 268 273 278 283	988
ctg gtg gaa gag ggc tgt gaa gat cga att ctg gta gca cat gac ata Leu Val Glu Glu Gly Cys Glu Asp Arg Ile Leu Val Ala His Asp Ile 284 289 294 299	1036
cat acg aaa acc cgg ctg atg aaa tat gga ggt cac ggc tat tct cat His Thr Lys Thr Arg Leu Met Lys Tyr Gly Gly His Gly Tyr Ser His 300 305 310 315	1084
ata ctc acc aat gtt gtt cct aaa atg ttg ctg aga ggc ata act gag Ile Leu Thr Asn Val Val Pro Lys Met Leu Leu Arg Gly Ile Thr Glu 316 321 326 331	1132
aat gtg ctt gat aag att cta ata gag aac cct aag caa tgg cta act Asn Val Leu Asp Lys Ile Leu Ile Glu Asn Pro Lys Gln Trp Leu Thr 332 337 342 347	1180
ttc aaa tag gatgggt gcttatgaat tcacaccttg agtataaaac ttgcagagaa Phe Lys * 348	1236
cattcagcga tttccagtcc actgtgagat ¹ attaatacagt tacctaggac taatgacaga	1296
tcatttcctt ctgatgagaa ctaggagggt ttgccttctc tgagaccagc tattacaact	1356

gtgcctctag ggagttactc agcctaattg agccctatta ttttaactta acaaaaataaa 1416
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 gtttttctcc ctaatctatc agctgcacta cttgagaaaa tttaaagtgt ttctagttaa 1536
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 aataatgctt atgtatctga agaaaaggtc agatctattg gaaatgacag cccgatactt 2136
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (196)..(1464)

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 acattacatg aagaccatgg ataaattata tttttttctc ttccgcctc tactaaccta 180
 gcaaattctct agaag atg acg gtg ttc ttt aaa acg ctt cga aat cac tgg 231
 Met Thr Val Phe Phe Lys Thr Leu Arg Asn His Trp
 1 5 10
 aag aaa act aca gct ggg ctc tgc ctg ctg acc tgg gga ggc cat tgg 279
 Lys Lys Thr Thr Ala Gly Leu Cys Leu Leu Thr Trp Gly Gly His Trp
 13 18 23 28
 ctc tat gga aaa cac tgt gat aac ctc cta agg aga gca gcc tgt caa 327
 Leu Tyr Gly Lys His Cys Asp Asn Leu Leu Arg Arg Ala Ala Cys Gln

29	34	39	44	
gaa gct cag gtg ttt ggc aat caa ctc att cct ccc aat gca caa gtg				375
Glu Ala Gln Val Phe Gly Asn Gln Leu Ile Pro Pro Asn Ala Gln Val				
45	50	55	60	
aag aag gcc act gtt ttt ctc aat cct gca gct tgc aaa gga aaa gcc				423
Lys Lys Ala Thr Val Phe Leu Asn Pro Ala Ala Cys Lys Gly Lys Ala				
61	66	71	76	
agg act cta ttt gaa aaa aat gct gcc ccg att tta cat tta tct ggc				471
Arg Thr Leu Phe Glu Lys Asn Ala Ala Pro Ile Leu His Leu Ser Gly				
77	82	87	92	
atg gat gtg act att gtt aag aca gat tat gag gga caa gcc aag aaa				519
Met Asp Val Thr Ile Val Lys Thr Asp Tyr Glu Gly Gln Ala Lys Lys				
93	98	103	108	
ctc ctg gaa ctg atg gaa aac acg gat gtg atc att gtt gca gga gga				567
Leu Leu Glu Leu Met Glu Asn Thr Asp Val Ile Ile Val Ala Gly Gly				
109	114	119	124	
gat ggg aca ctg cag gag gtt gtt act ggt gtt ctt cga cga aca gat				615
Asp Gly Thr Leu Gln Glu Val Val Thr Gly Val Leu Arg Arg Thr Asp				
125	130	135	140	
gag gct acc ttc agt aag att ccc att gga ttt atc cca ctg gga gag				663
Glu Ala Thr Phe Ser Lys Ile Pro Ile Gly Phe Ile Pro Leu Gly Glu				
141	146	151	156	
acc agt agt ttg agt cat acc ctc ttt gcc gaa agt gga aac aaa gtc				711
Thr Ser Ser Leu Ser His Thr Leu Phe Ala Glu Ser Gly Asn Lys Val				
157	162	167	172	
caa cat att act gat gcc aca ctt gcc att gtg aaa gga gag aca gtt				759
Gln His Ile Thr Asp Ala Thr Leu Ala Ile Val Lys Gly Glu Thr Val				
173	178	183	188	
cca ctt gat gtc ttg cag atc aag ggt gaa aag gaa cag cct gta ttt				807
Pro Leu Asp Val Leu Gln Ile Lys Gly Glu Lys Glu Gln Pro Val Phe				
189	194	199	204	
gca atg acc ggg ctt cga tgg gga tct ttc aga gat gct ggc gtc aaa				855
Ala Met Thr Gly Leu Arg Trp Gly Ser Phe Arg Asp Ala Gly Val Lys				
205	210	215	220	
gtt agc aag tac tgg tat ctt gag cct cta aaa atc aaa gca gcc cac				903
Val Ser Lys Tyr Trp Tyr Leu Glu Pro Leu Lys Ile Lys Ala Ala His				
221	226	231	236	
ttt ttc agc act ctt aag gag tgg cct cag act cat caa gcc tct atc				951
Phe Phe Ser Thr Leu Lys Glu Trp Pro Gln Thr His Gln Ala Ser Ile				
237	242	247	252	
tca tac acg gga cct aca gag aga cct ccc aat gaa cca gag gag acc				999
Ser Tyr Thr Gly Pro Thr Glu Arg Pro Pro Asn Glu Pro Glu Glu Thr				
253	258	263	268	

cct gta caa agg cct tct ttg tac agg aga ata tta cga agg ctt gcg	1047
Pro Val Gln Arg Pro Ser Leu Tyr Arg Arg Ile Leu Arg Arg Leu Ala	
269 274 279 284	
tcc tac tgg gca caa cca cag gat gcc ctt tcc caa gag gtg agc ccg	1095
Ser Tyr Trp Ala Gln Pro Gln Asp Ala Leu Ser Gln Glu Val Ser Pro	
285 290 295 300	
gag gtc tgg aaa gat gtg cag ctg tcc acc att gaa ctg tcc atc aca	1143
Glu Val Trp Lys Asp Val Gln Leu Ser Thr Ile Glu Leu Ser Ile Thr	
301 306 311 316	
aca cgg aat aat cag ctt gac ccg aca agc aaa gaa gat ttt ctg aat	1191
Thr Arg Asn Asn Gln Leu Asp Pro Thr Ser Lys Glu Asp Phe Leu Asn	
317 322 327 332	
atc tgc att gaa cct gac acc atc agc aaa gga gac ttt ata act ata	1239
Ile Cys Ile Glu Pro Asp Thr Ile Ser Lys Gly Asp Phe Ile Thr Ile	
333 338 343 348	
gga agt cga aag gtg aga aac ccc aag ctg cac gtg gag ggc acg gag	1287
Gly Ser Arg Lys Val Arg Asn Pro Lys Leu His Val Glu Gly Thr Glu	
349 354 359 364	
tgt ctc caa gcc agc cag tgc act ttg ctt atc ccg gag gga gca ggg	1335
Cys Leu Gln Ala Ser Gln Cys Thr Leu Leu Ile Pro Glu Gly Ala Gly	
365 370 375 380	
ggc tct ttt agc att gac agt gag gag tat gaa gcg atg cct gtg gag	1383
Gly Ser Phe Ser Ile Asp Ser Glu Glu Tyr Glu Ala Met Pro Val Glu	
381 386 391 396	
gtg aaa ctg ctc ccc agg aag ctg cag ttc ttc tgt gat cct agg aag	1431
Val Lys Leu Leu Pro Arg Lys Leu Gln Phe Phe Cys Asp Pro Arg Lys	
397 402 407 412	
aga gaa cag atg ctc aca agc ccc acc cag tga gcagcaga agacaagcac	1482
Arg Glu Gln Met Leu Thr Ser Pro Thr Gln *	
413 418 423	
tctgagacca cactttaggc caccggtggg accaaaaggg aacaggtgcc tcagccatcc	1542
caacagtgtc gtcagagggg ccccagggca ttttcatggc aagtaccct ctgccccac	1602
tccagcagtg cttcccaaag tgtgctctgt cacctgcttt gcaatcggct tccattagcg	1662
catgttttat tttggtgtga cggttgccc tcctaaacac ggactttcct caggctggtt	1722
caagacggaa aaggactttc ttctgttttc ttccaaagtg caaccacagt ggagagccca	1782
cggtgggctt agcctgecta ggcccttcca tttctcttct ttgaccgtgc taggaattcc	1842
aggaaagtgc attcctgccc tggtagacct ttctatgtc taggctcctc cacaggtgct	1902
gctattttgt gagctcggc tcctgttttag cttttatttc agttctaacc tcagtccaga	1962

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aacatatgtg aggttggttc cctcttcagc cacggctaca ataccggaaa atgctagttt 2022
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<210> 797
<211> 1111
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (43) .. (405)

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<400> 797
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Met His Ala Tyr
1

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gta agc ttg gat cct cta gag cag ccg cct act act act aaa ttc gcg 102
Val Ser Leu Asp Pro Leu Glu Gln Pro Pro Thr Thr Thr Lys Phe Ala
5 10 15 20

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gcc ggt cga ccg gag ctt tcg cag ctg gag aag gct cat cca cct gca 150
Ala Gly Arg Pro Glu Leu Ser Gln Leu Glu Lys Ala His Pro Pro Ala
21 26 31 36

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gac atg ggg cgc aga aag tca aaa cga aag ccg cct ccc aag aag aag 198
Asp Met Gly Arg Arg Lys Ser Lys Arg Lys Pro Pro Pro Lys Lys Lys
37 42 47 52

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atg aca ggc acc ctc gag acc cag ttc acc tgc ccc ttc tgc aac cac 246
Met Thr Gly Thr Leu Glu Thr Gln Phe Thr Cys Pro Phe Cys Asn His
53 58 63 68

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gag aaa tcc tgt gat gtg aaa atg gac cgt gcc cgc aac acc gga gtc 294
Glu Lys Ser Cys Asp Val Lys Met Asp Arg Ala Arg Asn Thr Gly Val
69 74 79 84

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atc tct tgt acc gtg tgc cta gag gaa ttc cag acg ccc ata acg tat 342
Ile Ser Cys Thr Val Cys Leu Glu Glu Phe Gln Thr Pro Ile Thr Tyr

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85	90	95	100	
ctg tca gaa ccc gtg gat gtg tac agt gat tgg ata gac gcc tgc gag				390
Leu Ser Glu Pro Val Asp Val Tyr Ser Asp Trp Ile Asp Ala Cys Glu				
101	106	111	116	
gcg gcc aat cag tag cgacacagag gacccgcccc ctgagcagcc ccgcgtactg				445
Ala Ala Asn Gln *				
117				
tggatccagc tgttcggttc tgggtccagag acattccagg ggtccagggg gtgggtcctg				505
ggctgtcaca gccgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtgtg tgtgtgtagt				565
gggtgtgcgt gtgggtgtgg gtgtgagtga gtgtgggtgt gtgtggctgc acgtgtcact				625
gggggtggccg tgagtgtgtg ctcaacaggta cgcggtgggtg tcgggttcct gggcctgagg				685
ggcctgaact gatctcactt ggctccgaaa gcctttgctg tgttccttgc agccctggc				745
ccccagcct tggggctctg gctccccccg gcggaattgg gggactgttt cctgacatcc				805
tggacaaggg aagcccacta gaggtctggaa caggacctct ccagcctcct caccagcacc				865
gtgcccatct caactggact tcccgccctc cttctccacc ttctagtgcc cgtggccggg				925
gattcaaagc cgccgttccc cagggtccctg ggctggggccc tgacagggag ccgccccct				985
ccccatggta accaggaagc ccgtttcatg ttcagttgct tttgtagagg aagcaagggc				1045
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aaaaaa				1111

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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (176)..(2359)

<400> 798	
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gagagatggg caaagatgaa gggacgtgcc agatcctcag ctgggggtccc gttta atg	178
	Met
	1

gat tct gac atg gat tat gaa agg cca aac gta gag acc atc aag tgc	226
Asp Ser Asp Met Asp Tyr Glu Arg Pro Asn Val Glu Thr Ile Lys Cys	

2	7	12	17	
gtt gtg gtg ggg gac aac gcc gtg ggt aag acc agg ctc atc tgt gcc				274
Val Val Val Gly Asp Asn Ala Val Gly Lys Thr Arg Leu Ile Cys Ala				
18	23	28	33	
cgc gct tgc aat gcc acc ctc acc cag tac cag ctg ctg gcc acg cat				322
Arg Ala Cys Asn Ala Thr Leu Thr Gln Tyr Gln Leu Leu Ala Thr His				
34	39	44	49	
gtg ccc aca gta tgg gcc atc gac caa tat cgt gtg tgc cag gag gtg				370
Val Pro Thr Val Trp Ala Ile Asp Gln Tyr Arg Val Cys Gln Glu Val				
50	55	60	65	
ctg gaa cgc tcc cga gac gtg gta gat gat gtc agc gtc tct ctg cgc				418
Leu Glu Arg Ser Arg Asp Val Val Asp Asp Val Ser Val Ser Leu Arg				
66	71	76	81	
ctc tgg gac acc ttt gga gac cac cac aaa gac cgt cgc ttt gct tat				466
Leu Trp Asp Thr Phe Gly Asp His His Lys Asp Arg Arg Phe Ala Tyr				
82	87	92	97	
ggg aga tct gat gtg gtg gtt ctg tgc ttc tcc att gcc aac ccc aat				514
Gly Arg Ser Asp Val Val Val Leu Cys Phe Ser Ile Ala Asn Pro Asn				
98	103	108	113	
tcc ctc cac cat gtc aag acc atg tgg tac cca gaa atc aag cac ttc				562
Ser Leu His His Val Lys Thr Met Trp Tyr Pro Glu Ile Lys His Phe				
114	119	124	129	
tgc ccc cga gca cct gtc atc ttg gtg ggc tgc cag ttg gac ctg cgc				610
Cys Pro Arg Ala Pro Val Ile Leu Val Gly Cys Gln Leu Asp Leu Arg				
130	135	140	145	
tac gct gac ctg gag gct gtc aac agg gct agg cga ccc ttg gct agg				658
Tyr Ala Asp Leu Glu Ala Val Asn Arg Ala Arg Arg Pro Leu Ala Arg				
146	151	156	161	
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<213> Homo sapiens

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Met
1

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Ala Ala Gly Gly Ser Gly Val Gly Gly Lys Arg Ser Ser Lys Ser Asp
2 7 12 17

gcc gat tct ggt ttc ctg ggg ctg cgg ccc act tcg gtg gac cca gcg 151
Ala Asp Ser Gly Phe Leu Gly Leu Arg Pro Thr Ser Val Asp Pro Ala
18 23 28 33

ctg agg cgg cgg cgg cga ggc cca aga aat aag aag cgg ggc tgg cgg 199
Leu Arg Arg Arg Arg Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp Arg
34 39 44 49

cgg ctt gct cag gag ccg ctg ggg ctg gag gtt gac cag ttc ctg gaa 247
Arg Leu Ala Gln Glu Pro Leu Gly Leu Glu Val Asp Gln Phe Leu Glu
50 55 60 65

gac gtg cgg cta cag gag cgc acg agc ggt ggc ttg ttg tca gag gcc 295
Asp Val Arg Leu Gln Glu Arg Thr Ser Gly Gly Leu Leu Ser Glu Ala
66 71 76 81

cca aat gaa aaa ctc ttc ttc gtg gac act ggc tcc aag gaa aaa ggg	343
Pro Asn Glu Lys Leu Phe Phe Val Asp Thr Gly Ser Lys Glu Lys Gly	
82 87 92 97	
ctg aca aag aag aga acc aaa gtc cag aag aag tca ctg ctt ctc aag	391
Leu Thr Lys Lys Arg Thr Lys Val Gln Lys Lys Ser Leu Leu Leu Lys	
98 103 108 113	
aaa ccc ctt cgg gtt gac ctc atc ctc gag aac aca tcc aaa gtc cct	439
Lys Pro Leu Arg Val Asp Leu Ile Leu Glu Asn Thr Ser Lys Val Pro	
114 119 124 129	
gcc ccc aaa gac gtc ctc gcc cac cag gtc ccc aac gcc aag aag ctc	487
Ala Pro Lys Asp Val Leu Ala His Gln Val Pro Asn Ala Lys Lys Leu	
130 135 140 145	
agg cgg aag gag cag cta tgg gag aag ctg gcc aag cag ggc gag ctg	535
Arg Arg Lys Glu Gln Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu Leu	
146 151 156 161	
ccc cgg gag gtg cgc agg gcc cag gcc cgg ctc ctc aac cct tct gca	583
Pro Arg Glu Val Arg Arg Ala Gln Ala Arg Leu Leu Asn Pro Ser Ala	
162 167 172 177	
aca agg gcc aag ccc ggg ccc cag gac acc gta gag cgg ccc ttc tac	631
Thr Arg Ala Lys Pro Gly Pro Gln Asp Thr Val Glu Arg Pro Phe Tyr	
178 183 188 193	
gac ctc tgg gcc tca gac aac ccc ctg gac agg ccg ttg gtt ggc cag	679
Asp Leu Trp Ala Ser Asp Asn Pro Leu Asp Arg Pro Leu Val Gly Gln	
194 199 204 209	
gat gag ttt ttc ctg gag cag acc aag aag aaa gga gtg aag cgg cca	727
Asp Glu Phe Phe Leu Glu Gln Thr Lys Lys Lys Gly Val Lys Arg Pro	
210 215 220 225	
gca cgc ctg cac acc aag ccg tcc cag gca ccc gcc gtg gag gtg gcg	775
Ala Arg Leu His Thr Lys Pro Ser Gln Ala Pro Ala Val Glu Val Ala	
226 231 236 241	
cct gcc gga gct tcc tac aat cca tcc ttt gaa gac cac cag acc ctg	823
Pro Ala Gly Ala Ser Tyr Asn Pro Ser Phe Glu Asp His Gln Thr Leu	
242 247 252 257	
ctc tca gcg gcc cac gag gtg gag ttg cag cgg cag aag gag gcg gag	871
Leu Ser Ala Ala His Glu Val Glu Leu Gln Arg Gln Lys Glu Ala Glu	
258 263 268 273	
aag ctg gag cgg cag ctg gcc ctg ccc gcc acg gag cag gcc gcc acc	919
Lys Leu Glu Arg Gln Leu Ala Leu Pro Ala Thr Glu Gln Ala Ala Thr	
274 279 284 289	
cag gag tcc aca ttc cag gag ctg tgc gag ggg ctg ctg gag gag tgc	967
Gln Glu Ser Thr Phe Gln Glu Leu Cys Glu Gly Leu Leu Glu Glu Ser	
290 295 300 305	

Ala Arg Lys Leu Pro Pro Lys Arg Ala Glu Gly Asp Ile Lys Pro Tyr	
197 202 207 212	
tcc tct agt gac cga gaa ttt ctg aag gta gct gtg gag cct cct tgg	787
Ser Ser Ser Asp Arg Glu Phe Leu Lys Val Ala Val Glu Pro Pro Trp	
213 218 223 228	
ccc cta aac agg gcc cct cgc cgc gcc aca cct cca gcc cac cca ccc	835
Pro Leu Asn Arg Ala Pro Arg Arg Ala Thr Pro Pro Ala His Pro Pro	
229 234 239 244	
ccc cgc tcc agc agc ctg gga aac tca cca gaa cga ggt ccc ctc cgc	883
Pro Arg Ser Ser Ser Leu Gly Asn Ser Pro Glu Arg Gly Pro Leu Arg	
245 250 255 260	
ccc ttt gtg cca gag cag gag ctg ctg cgt tcc ttg cgc ctc tgc ccc	931
Pro Phe Val Pro Glu Gln Glu Leu Leu Arg Ser Leu Arg Leu Cys Pro	
261 266 271 276	
cca cac cct acc gcc cgc ctt ctg ttg gct gct gac cct ggg ggc agc	979
Pro His Pro Thr Ala Arg Leu Leu Leu Ala Ala Asp Pro Gly Gly Ser	
277 282 287 292	
cca gct caa cgt cgt cgc acc agc tcc ctt ccc cgc tct gag gag agt	1027
Pro Ala Gln Arg Arg Arg Thr Ser Ser Leu Pro Arg Ser Glu Glu Ser	
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Arg Tyr *	
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tccggagaaa atg gcg gcg gag ccg aac aag acc gaa atc cag act ctt	109
Met Ala Ala Glu Pro Asn Lys Thr Glu Ile Gln Thr Leu	
1 5 10	
ttt aag agg ctt cgc gca gtt cca acc aac aag gcc tgt ttc gac tgc	157
Phe Lys Arg Leu Arg Ala Val Pro Thr Asn Lys Ala Cys Phe Asp Cys	
14 19 24 29	
ggc gcc aag aat ccg agt tgg gcc agc atc acg tac ggt gtt ttc ttg	205
Gly Ala Lys Asn Pro Ser Trp Ala Ser Ile Thr Tyr Gly Val Phe Leu	

30	35	40	45	
tgc att gac tgt tcc ggg gtg cac cgc tcc ctg ggc gtc cat ctg agc Cys Ile Asp Cys Ser Gly Val His Arg Ser Leu Gly Val His Leu Ser 46 51 56 61				253
ttc atc agg tcc aca gag ttg gat tcc aac tgg aac tgg ttc cag ctg Phe Ile Arg Ser Thr Glu Leu Asp Ser Asn Trp Asn Trp Phe Gln Leu 62 67 72 77				301
agg tgt atg cag gtc ggc ggg aat gcc aat gcg acg gct ttt ttt cgc Arg Cys Met Gln Val Gly Gly Asn Ala Asn Ala Thr Ala Phe Phe Arg 78 83 88 93				349
caa cat gga tgc aca gcc aat gat gcc aac acc aaa tat aat agc cga Gln His Gly Cys Thr Ala Asn Asp Ala Asn Thr Lys Tyr Asn Ser Arg 94 99 104 109				397
gct gcc cag atg tac cgg gag aag atc cgg cag ctg ggg agt gcg gcc Ala Ala Gln Met Tyr Arg Glu Lys Ile Arg Gln Leu Gly Ser Ala Ala 110 115 120 125				445
ctg gct agg cat ggc act gat ctt tgg ata gac aac atg agt agt gcc Leu Ala Arg His Gly Thr Asp Leu Trp Ile Asp Asn Met Ser Ser Ala 126 131 136 141				493
gtt cct aat cac tcc cca gag aag aag gac tct gat ttc ttc aca gaa Val Pro Asn His Ser Pro Glu Lys Lys Asp Ser Asp Phe Phe Thr Glu 142 147 152 157				541
cac act caa ccc cct gcc tgg gat gcg cca gcc act gag cct tca ggg His Thr Gln Pro Pro Ala Trp Asp Ala Pro Ala Thr Glu Pro Ser Gly 158 163 168 173				589
acc cag cag cca gcc ccg tct aca gag agc agt ggc ctg gca cag ccg Thr Gln Gln Pro Ala Pro Ser Thr Glu Ser Ser Gly Leu Ala Gln Pro 174 179 184 189				637
gag cat ggc ccc aac aca gac ctg ctt ggc acc tca ccc aaa gcc tca Glu His Gly Pro Asn Thr Asp Leu Leu Gly Thr Ser Pro Lys Ala Ser 190 195 200 205				685
ctg gaa ctg aaa agc tcc atc att ggc aag aag aag cca gca gca gct Leu Glu Leu Lys Ser Ser Ile Ile Gly Lys Lys Lys Pro Ala Ala Ala 206 211 216 221				733
aag aaa ggg ctg ggt gcc aag aaa ggc cta ggg gcc cag aag gtg agc Lys Lys Gly Leu Gly Ala Lys Lys Gly Leu Gly Ala Gln Lys Val Ser 222 227 232 237				781
agc cag agc ttc agt gag att gag cgg cag gct cag gtg gca gag aag Ser Gln Ser Phe Ser Glu Ile Glu Arg Gln Ala Gln Val Ala Glu Lys 238 243 248 253				829
ctc cgt gag cag cag gca gcc gat gcc aag aag cag gcg gag gag tcc Leu Arg Glu Gln Gln Ala Ala Asp Ala Lys Lys Gln Ala Glu Glu Ser 254 259 264 269				877

atg gtc gcc tcc atg cgt ctg gcc tac cag gag ctc cag att gat cgt	925
Met Val Ala Ser Met Arg Leu Ala Tyr Gln Glu Leu Gln Ile Asp Arg	
270 275 280 285	
aaa aaa gag gaa aag aag cta cag aat ctg gaa ggg aag aag cga gag	973
Lys Lys Glu Glu Lys Lys Leu Gln Asn Leu Glu Gly Lys Lys Arg Glu	
286 291 296 301	
cag gca gaa agg ttg ggc atg ggc ttg gta tcc cga agc tct gtc tcc	1021
Gln Ala Glu Arg Leu Gly Met Gly Leu Val Ser Arg Ser Ser Val Ser	
302 307 312 317	
cac tcc gtg ctg tct gag atg cag gtg att gag cag gaa acc cca gtg	1069
His Ser Val Leu Ser Glu Met Gln Val Ile Glu Gln Glu Thr Pro Val	
318 323 328 333	
agt gca aaa tcc tct cgc tgc cag ctg gac ttg ttt gac gat gtt ggt	1117
Ser Ala Lys Ser Ser Arg Ser Gln Leu Asp Leu Phe Asp Asp Val Gly	
334 339 344 349	
act ttc gcc tct gga ccc cca aag taa ggctg tttctagct gtaaacttg	1169
Thr Phe Ala Ser Gly Pro Pro Lys *	
350 355	
ctgctgtgtt cctcatcagg cttctctgag ccactctact gtcttcctag gtacaaggac	1229
aatccctttt ccttagggga aagcc	1254
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ctgcagcggc agaggcagca tccagcggcg gcgccagcag ttccagtcctg ttgctttact	180
ttttgcttca ccgacatagt catt atg ccg aag aga aag tct cca gag aat	231
Met Pro Lys Arg Lys Ser Pro Glu Asn	
1 5	
aca gag ggc aaa gat gga tcc aaa gta act aaa cag gag ccc aca aga	279
Thr Glu Gly Lys Asp Gly Ser Lys Val Thr Lys Gln Glu Pro Thr Arg	
10 15 20 25	
cgg tct gcc aga ttg tca gcg aaa cct gct cca cca aaa cct gaa ccc	327

Arg	Ser	Ala	Arg	Leu	Ser	Ala	Lys	Pro	Ala	Pro	Pro	Lys	Pro	Glu	Pro		
26					31					36					41		
aaa cca aga aaa aca tct gct aag aaa gaa cct gga gca aag att agc																	375
Lys	Pro	Arg	Lys	Thr	Ser	Ala	Lys	Lys	Glu	Pro	Gly	Ala	Lys	Ile	Ser		
42					47					52					57		
aga ggt gct aaa ggg aag aag gag gaa aag cag gaa gct gga aag gaa																	423
Arg	Gly	Ala	Lys	Gly	Lys	Lys	Glu	Glu	Lys	Gln	Glu	Ala	Gly	Lys	Glu		
58					63					68					73		
ggt act gca cca tct gaa aat ggt gaa act aaa gct gaa gag gca cag																	471
Gly	Thr	Ala	Pro	Ser	Glu	Asn	Gly	Glu	Thr	Lys	Ala	Glu	Glu	Ala	Gln		
74					79					84					89		
aaa act gaa tct gta gat aac gag gga gaa tga attgtcat gaaaaattgg																	522
Lys	Thr	Glu	Ser	Val	Asp	Asn	Glu	Gly	Glu	*							
90					95					100							
ggttgatttt atgtatctct tgggacaact tttaaaagct atttttacca agtattttgt																	582
aaatgctaatt ttttaggac tctactagtt ggcatacgaa aatatataag gatggacatt																	642
ttatcgtctc atagtcatgc tttttggaaa tttacatcat cctcaagtaa aataaatatc																	702
agttaaatat tgaaaaaaaa aaaaa																	727
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ctgcagcggc agaggcagca tccagcggcg gcgccagcag ttccagtccg ttgctttact																	180
ttttgcttca ccgacatagt catt atg ccg aag aga aag tct cca gag aat																	231
								Met	Pro	Lys	Arg	Lys	Ser	Pro	Glu	Asn	
								1				5					
aca gag ggc aaa gat gga tcc aaa gta act aaa cag gag ccc aca aga																	279
Thr	Glu	Gly	Lys	Asp	Gly	Ser	Lys	Val	Thr	Lys	Gln	Glu	Pro	Thr	Arg		
10					15					20				25			
cgg tct gcc aga ttg tca gcg aaa cct gct cca cca aaa cct gaa ccc																	327
Arg	Ser	Ala	Arg	Leu	Ser	Ala	Lys	Pro	Ala	Pro	Pro	Lys	Pro	Glu	Pro		
26					31					36					41		

aaa cca aga aaa aca tct gct aag aaa gaa cct gga gca aag att agc 375
Lys Pro Arg Lys Thr Ser Ala Lys Lys Glu Pro Gly Ala Lys Ile Ser
42 47 52 57

aga ggt gct aaa ggg aag aag gag gaa aag cag gaa gct gga aag gaa 423
Arg Gly Ala Lys Gly Lys Lys Glu Glu Lys Gln Glu Ala Gly Lys Glu
58 63 68 73

gga cag aaa act gaa tct gta gat aac gag gga gaa tga attgtcatga 472
Gly Gln Lys Thr Glu Ser Val Asp Asn Glu Gly Glu *
74 79 84

aaaattgggg ttgattttat gtatctcttg ggacaacttt taaaagctat ttttaccag 532
tattttgtaa atgctaattt tttaggactc tactagttgg catagcaaaa tatataagga 592
tggacatttt atcgtctcat agtcatgctt tttggaaatt tacatcatcc tcaagtaaaa 652
taaatatcag ttaaattattg aaaaaaaaaa aaa 685

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gaggtcagct cccgcgtgtc tccgctcgac aggggtgcttg ggcagagccc atcgggtagg 120
cgcggggcc atg gcg cag tac aag ggc acc atg cgc gag gca ggc cgt gcc 170
Met Ala Gln Tyr Lys Gly Thr Met Arg Glu Ala Gly Arg Ala
1 5 10

atg cac ctc ctc aag aag cgc gaa agg cag cgg gag cag atg gag gtg 218
Met His Leu Leu Lys Lys Arg Glu Arg Gln Arg Glu Gln Met Glu Val
15 20 25 30

ctg aag cag cgc atc gcc gag gag acc atc ctc aag tcg cag gtg gac 266
Leu Lys Gln Arg Ile Ala Glu Glu Thr Ile Leu Lys Ser Gln Val Asp
31 36 41 46

aag agg ttc tcg gcg cat tac gac gcc gtg gag gcc gag ctg aag tcc 314
Lys Arg Phe Ser Ala His Tyr Asp Ala Val Glu Ala Glu Leu Lys Ser
47 52 57 62

agc acg gtg ggc ctg gtg acc ctg aac gac atg aag gcc cgg cag gag 362
Ser Thr Val Gly Leu Val Thr Leu Asn Asp Met Lys Ala Arg Gln Glu
63 68 73 78

28	33	38	43	
ctg ttc ctg aag ccg tcc acg gcc tac gcg ccc gag ggc tcg ccc atc				436
Leu Phe Leu Lys Pro Ser Thr Ala Tyr Ala Pro Glu Gly Ser Pro Ile				
44	49	54	59	
ctc atg ccc gcg tac act cgc aac ctg cac cac gag ctg gag ctg ggc				484
Leu Met Pro Ala Tyr Thr Arg Asn Leu His His Glu Leu Glu Leu Gly				
60	65	70	75	
gtg gtg atg ggc aag cgc tgc cgc gca gtc ccc gag gct gcg gcc atg				532
Val Val Met Gly Lys Arg Cys Arg Ala Val Pro Glu Ala Ala Ala Met				
76	81	86	91	
gac tac gtg ggc ggc tat gcc ctg tgc ctg gat atg acc gcc cgg gac				580
Asp Tyr Val Gly Gly Tyr Ala Leu Cys Leu Asp Met Thr Ala Arg Asp				
92	97	102	107	
gtg cag gac gag tgc aag aag aag ggg ctg ccc tgg act ctg gcg aag				628
Val Gln Asp Glu Cys Lys Lys Lys Gly Leu Pro Trp Thr Leu Ala Lys				
108	113	118	123	
agc ttc acg gcg tcc tgc ccg gtc agc gcg ttc gtg ccc aag gag aag				676
Ser Phe Thr Ala Ser Cys Pro Val Ser Ala Phe Val Pro Lys Glu Lys				
124	129	134	139	
atc cct gac cct cac aag ctg aag ctc tgg ctc aag gtc aac ggc gaa				724
Ile Pro Asp Pro His Lys Leu Lys Leu Trp Leu Lys Val Asn Gly Glu				
140	145	150	155	
ctc aga cag gag ggt gag aca tcc tcc atg att ttt tcc atc ccc tac				772
Leu Arg Gln Glu Gly Glu Thr Ser Ser Met Ile Phe Ser Ile Pro Tyr				
156	161	166	171	
atc atc agc tat gtt tct aag atc ata acc ttg gaa gaa gga gat att				820
Ile Ile Ser Tyr Val Ser Lys Ile Ile Thr Leu Glu Glu Gly Asp Ile				
172	177	182	187	
atc ttg act ggg acg cca aag gga gtt gga ccg gtt aaa gaa aac gat				868
Ile Leu Thr Gly Thr Pro Lys Gly Val Gly Pro Val Lys Glu Asn Asp				
188	193	198	203	
gag atc gag gct ggc ata cac ggg ctg gtc agt atg aca ttt aaa gtg				916
Glu Ile Glu Ala Gly Ile His Gly Leu Val Ser Met Thr Phe Lys Val				
204	209	214	219	
gaa aag cca gaa tat tga gttatt tcttaacaag ttctgagaga gaagggagca				970
Glu Lys Pro Glu Tyr *				
220	225			
agacaagagc aagcaacggc tattaaatgt cacaatcctt taattagaaa ccatttattg				1030
gccggacgcg gtggctcacg cctgtaatcg cagcactttg ggaggccgag gcgggcggct				1090
cacgacgtca ggagatccag accatcttgg ctaacagggt gaaaccccggt ctctactaaa				1150
aatacaaaaa attagccggg cgtggtggcg ggcgcctgta gtcccagcta ctctggaggc				1210

tgaggcagga gaatcaattg aacccgggag gcggagctta cagtgagctg agattgcgcc 1270
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 1 5 10

caa ctc tct gca gca tct aaa gaa att gga aga tgc aac aca aac caa 96
 Gln Leu Ser Ala Ala Ser Lys Glu Ile Gly Arg Cys Asn Thr Asn Gln
 17 22 27 32

aca atg ggc cat ttt gta cat tct tca gga ttc tgt gtg tcc atg ggg 144
 Thr Met Gly His Phe Val His Ser Ser Gly Phe Cys Val Ser Met Gly
 33 38 43 48

gca gcc cat ggc tgg cag ccc cat gaa ggc agg gcc agc atc tgt gtt 192
 Ala Ala His Gly Trp Gln Pro His Glu Gly Arg Ala Ser Ile Cys Val
 49 54 59 64

gtt atc agt acc cat cgg cac ctt gca cac gca tcc tca gaa gct tca 240
 Val Ile Ser Thr His Arg His Leu Ala His Ala Ser Ser Glu Ala Ser
 65 70 75 80

act ctg gag gca atg ggt cga aag gaa gaa gat gac tgc agt tcc tgg 288
 Thr Leu Glu Ala Met Gly Arg Lys Glu Glu Asp Asp Cys Ser Ser Trp
 81 86 91 96

aag aaa cag acc acc aac atc cgg aaa acc ttc att ttt atg gaa gtg 336
 Lys Lys Gln Thr Thr Asn Ile Arg Lys Thr Phe Ile Phe Met Glu Val
 97 102 107 112

ctg gga tca gga gct ttc tca gaa gtt ttc ctg gtg aag caa aga ctg 384
 Leu Gly Ser Gly Ala Phe Ser Glu Val Phe Leu Val Lys Gln Arg Leu
 113 118 123 128

act ggg aag ctc ttt gct ctg aag tgc atc aag aag tca cct gcc ttc 432
 Thr Gly Lys Leu Phe Ala Leu Lys Cys Ile Lys Lys Ser Pro Ala Phe

129					134					139					144	
cgg	gac	agc	agc	ctg	gag	aat	gag	att	gct	gtg	ttg	aaa	aag	atc	aag	480
Arg	Asp	Ser	Ser	Leu	Glu	Asn	Glu	Ile	Ala	Val	Leu	Lys	Lys	Ile	Lys	
145					150					155					160	
cat	gaa	aac	att	gtg	acc	ctg	gag	gac	atc	tat	gag	agc	acc	acc	cac	528
His	Glu	Asn	Ile	Val	Thr	Leu	Glu	Asp	Ile	Tyr	Glu	Ser	Thr	Thr	His	
161					166					171					176	
tac	tac	ctg	gtc	atg	cag	ctt	gtt	tct	ggg	ggg	gag	ctc	ttt	gac	cgg	576
Tyr	Tyr	Leu	Val	Met	Gln	Leu	Val	Ser	Gly	Gly	Glu	Leu	Phe	Asp	Arg	
177					182					187					192	
atc	ctg	gag	cgg	ggg	gtc	tac	aca	gag	aag	gat	gcc	agt	ctg	gtg	atc	624
Ile	Leu	Glu	Arg	Gly	Val	Tyr	Thr	Glu	Lys	Asp	Ala	Ser	Leu	Val	Ile	
193					198					203					208	
cag	cag	gtc	ttg	tgc	gca	gtg	aaa	tac	cta	cat	gag	aat	ggc	atc	gtc	672
Gln	Gln	Val	Leu	Ser	Ala	Val	Lys	Tyr	Leu	His	Glu	Asn	Gly	Ile	Val	
209					214					219					224	
cac	aga	gac	tta	aag	gtg	tca	agg	cgg	gag	tcc	tgg	ccc	gaa	aac	ctg	720
His	Arg	Asp	Leu	Lys	Val	Ser	Arg	Arg	Glu	Ser	Trp	Pro	Glu	Asn	Leu	
225					230					235					240	
ctt	tac	ctt	acc	cct	gaa	gag	aac	tct	aag	atc	atg	atc	act	gac	ttt	768
Leu	Tyr	Leu	Thr	Pro	Glu	Glu	Asn	Ser	Lys	Ile	Met	Ile	Thr	Asp	Phe	
241					246					251					256	
ggg	ctg	tcc	aag	atg	gaa	cag	aat	ggc	atc	atg	tcc	act	gcc	tgt	ggg	816
Gly	Leu	Ser	Lys	Met	Glu	Gln	Asn	Gly	Ile	Met	Ser	Thr	Ala	Cys	Gly	
257					262					267					272	
acc	cca	ggc	tac	gtg	gct	cca	gaa	gtg	ctg	gcc	cag	aaa	ccc	tac	agc	864
Thr	Pro	Gly	Tyr	Val	Ala	Pro	Glu	Val	Leu	Ala	Gln	Lys	Pro	Tyr	Ser	
273					278					283					288	
aag	gct	gtg	gat	tgc	tgg	tcc	atc	ggc	gtc	atc	acc	tac	ata	ttg	ctc	912
Lys	Ala	Val	Asp	Cys	Trp	Ser	Ile	Gly	Val	Ile	Thr	Tyr	Ile	Leu	Leu	
289					294					299					304	
tgt	gga	tac	ccc	cca	ttc	tat	gaa	gaa	acg	gag	tct	aag	ctt	ttc	gag	960
Cys	Gly	Tyr	Pro	Pro	Phe	Tyr	Glu	Glu	Thr	Glu	Ser	Lys	Leu	Phe	Glu	
305					310					315					320	
aag	atc	aag	gag	ggc	tac	tat	gag	ttt	gag	tct	cca	ttc	tgg	gat	gac	1008
Lys	Ile	Lys	Glu	Gly	Tyr	Tyr	Glu	Phe	Glu	Ser	Pro	Phe	Trp	Asp	Asp	
321					326					331					336	
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Ile	Ser	Glu	Ser	Ala	Lys	Asp	Phe	Ile	Cys	His	Leu	Leu	Glu	Lys	Asp	
337					342					347					352	
ccg	aac	gag	cgg	tac	acc	tgt	gag	aag	gcc	ttg	agt	cat	ccc	tgg	att	1104
Pro	Asn	Glu	Arg	Tyr	Thr	Cys	Glu	Lys	Ala	Leu	Ser	His	Pro	Trp	Ile	
353					358					363					368	

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 Asp Gly Asn Thr Ala Leu His Arg Asp Ile Tyr Pro Ser Val Ser Leu
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 cag atc cag aag aac ttt gct aag agc aag tgg agg caa gcc ttc aac 1200
 Gln Ile Gln Lys Asn Phe Ala Lys Ser Lys Trp Arg Gln Ala Phe Asn
 385 390 395 400
 gca gca gct gtg gtg cac cac atg agg aag cta cac atg aac ctg cac 1248
 Ala Ala Ala Val Val His His Met Arg Lys Leu His Met Asn Leu His
 401 406 411 416
 agc ccg ggc gtc cgc cca gag gtg gag aac agg ccg cct gaa act caa 1296
 Ser Pro Gly Val Arg Pro Glu Val Glu Asn Arg Pro Pro Glu Thr Gln
 417 422 427 432
 gcc tca gaa acc tct aga ccc agc tcc cct gag atc acc atc acc gag 1344
 Ala Ser Glu Thr Ser Arg Pro Ser Ser Pro Glu Ile Thr Ile Thr Glu
 433 438 443 448
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 Ala Pro Val Leu Asp His Ser Val Ala Leu Pro Ala Leu Thr Gln Leu
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 ccc tgc cag cat ggc cgc cgg ccc act gcc cct ggt ggc agg tcc ctc 1440
 Pro Cys Gln His Gly Arg Arg Pro Thr Ala Pro Gly Gly Arg Ser Leu
 465 470 475 480
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 Asn Cys Leu Val Asn Gly Ser Leu His Ile Ser Ser Ser Leu Val Pro
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 Met His Gln Gly Ser Leu Ala Ala Gly Pro Cys Gly Cys Cys Ser Ser
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 Cys Leu Asn Ile Gly Ser Lys Gly Lys Ser Ser Tyr Cys Ser Glu Pro
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Ala Met Lys Glu Val	Val Arg Val Arg Lys Ile Ala Val Gly Ile His			
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cac gcc cat cac cac	tac cac cac ggg tgg ttc gtc atg att gca act	546		
His Ala His His His	Tyr His His Gly Trp Phe Val Met Ile Ala Thr			
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Leu Leu Arg Gly Val	Trp Lys Pro Glu Thr Asn Glu Ile Leu His Met			
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tct ttc ccc acc aag	gcc agc ctg tat gga gcc atc ctc ttc acc ctc	690		
Ser Phe Pro Thr Lys	Ala Ser Leu Tyr Gly Ala Ile Leu Phe Thr Leu			
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cag cag acc cgc tgg	ctc cca gtg tcc aaa gcc agc ctc atc ttc atc	738		
Gln Gln Thr Arg Trp	Leu Pro Val Ser Lys Ala Ser Leu Ile Phe Ile			
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ttc acc ttg ttc atg	gtg tcc tgt aag gtg ttt ctg aca gcc acc cac	786		
Phe Thr Leu Phe Met	Val Ser Cys Lys Val Phe Leu Thr Ala Thr His			
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Ser His Ser Ser Pro	Phe Asp Ala Leu Glu Gly Tyr Ile Cys Pro Val			
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Leu Phe Gly Ser Ala	Cys Gly Gly Asp His His His Asp Asn His Gly			
248	253	258	263	
ggg tcc cac agc ggt	ggt ggg cca gga gct cag cat tgc gcc atg ccc	930		
Gly Ser His Ser Gly	Gly Gly Pro Gly Ala Gln His Ser Ala Met Pro			
264	269	274	279	
gcc aag tcc aag gag	gag ttg agc gag ggc tcc agg aag aag aag gcc	978		
Ala Lys Ser Lys Glu	Glu Leu Ser Glu Gly Ser Arg Lys Lys Lys Ala			
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Lys Lys Ala Asp *				
296				
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gtccgcactc ggccgcctgc cgtgcccgtc tgcgcccgtg tcatcctcac tcgggacgca 180
gggaccggtt ttaaatacaca ggggcgtgtg tcagcctgcc ctaggacttc atg tct 236
Met Ser
1

ata tat ttc ccc att cac tgc ccc gac tat ctg aga tcg gcc aag atg 284
Ile Tyr Phe Pro Ile His Cys Pro Asp Tyr Leu Arg Ser Ala Lys Met
3 8 13 18

act gag gtg atg atg aac acc cag ccc atg gag gag atc ggc ctc agc 332
Thr Glu Val Met Met Asn Thr Gln Pro Met Glu Glu Ile Gly Leu Ser
19 24 29 34

ccc cgc aag gat ggc ctt tcc tac cag atc ttc cca gac ccg tca gat 380
Pro Arg Lys Asp Gly Leu Ser Tyr Gln Ile Phe Pro Asp Pro Ser Asp
35 40 45 50

ttt gac cgc tgc tgc aaa ctg aag gac cgt ctg ccc tcc ata gtg gtg 428
Phe Asp Arg Cys Cys Lys Leu Lys Asp Arg Leu Pro Ser Ile Val Val
51 56 61 66

gaa ccc aca gaa ggg gag gtg gag agc ggg gag ctc cgg tgg ccc cct 476
Glu Pro Thr Glu Gly Glu Val Glu Ser Gly Glu Leu Arg Trp Pro Pro
67 72 77 82

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gag gag ttc ctg gtc cag gag gat gag caa gat aac tgc gaa gag aca	524
Glu Glu Phe Leu Val Gln Glu Asp Glu Gln Asp Asn Cys Glu Glu Thr	
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Ala Lys Glu Asn Lys Glu Gln *	
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gccagcatct gttcctgaac tgtgtttttc ccatcatgac ggaagaagag agtgagccgc	638
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tttcttttct tttcttgct tttttttttt ttgaaatttg ccgagcagtg gagccctctg	758
acaatttgca aggccctctg agaaaggaag ctgcttagag ccaggggggt agtgggtgag	818
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catttggggt aagaaaacaa acatgaggca aaagaaaaaa tacatgtttt taagaaaaca	998
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<222> (268) .. (1281)

<400> 812

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ctagagaccg agggccgggg tccggggcccg gcggcgggac ccaggcgggt gaggctggtc      240
aggagtcagc cagcctgaaa gagcagg      atg gat ctt gat gtg gtt aac atg      291
                                   Met Asp Leu Asp Val Val Asn Met
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ttt gtg att gcg ggc ggc acg ctg gcc atc cca atc ctg gca ttt gtg      339
Phe Val Ile Ala Gly Gly Thr Leu Ala Ile Pro Ile Leu Ala Phe Val
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gct tca ttt ctt ctg tgg cct tca gca ctg ata aga atc tat tat tgg      387
Ala Ser Phe Leu Leu Trp Pro Ser Ala Leu Ile Arg Ile Tyr Tyr Trp
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tac tgg cgg agg aca ttg ggc atg caa gtc cgc tat gtt cac cat gaa      435
Tyr Trp Arg Arg Thr Leu Gly Met Gln Val Arg Tyr Val His His Glu
 41                               46                               51                               56

gac tat cag ttc tgt tat tcc ttc cgg ggc agg cct ggg cac aaa ccc      483
Asp Tyr Gln Phe Cys Tyr Ser Phe Arg Gly Arg Pro Gly His Lys Pro
 57                               62                               67                               72

tcc atc ctc atg ctc cac gga ttc tct gcc cac aag gat atg tgg ctc      531
Ser Ile Leu Met Leu His Gly Phe Ser Ala His Lys Asp Met Trp Leu
 73                               78                               83                               88

agt gtg gtc aag ttc ctt cca aag aac ctg cac ttg gtc tgc gtg gac      579
Ser Val Val Lys Phe Leu Pro Lys Asn Leu His Leu Val Cys Val Asp
 89                               94                               99                               104

atg cca gga cat gag ggc acc acc cgc tcc tcc ctg gat gac ctg tcc      627
Met Pro Gly His Glu Gly Thr Thr Arg Ser Ser Leu Asp Asp Leu Ser
105                               110                               115                               120

ata gat ggg caa gtt aag agg ata cac cag ttt gta gaa tgc ctg aag      675
Ile Asp Gly Gln Val Lys Arg Ile His Gln Phe Val Glu Cys Leu Lys
121                               126                               131                               136

ctg aac aaa aaa cct ttc cac ctg gta ggc acc tcc atg ggt ggc cag      723
Leu Asn Lys Lys Pro Phe His Leu Val Gly Thr Ser Met Gly Gly Gln
137                               142                               147                               152

gtg gct ggg gtg tat gct gct tac tac cca tcg gat gtc tcc agc ctg      771
Val Ala Gly Val Tyr Ala Ala Tyr Tyr Pro Ser Asp Val Ser Ser Leu
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<222> (141)..(2006)

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gccaggcagt agaggccgct atg gcg aac gtt ccg tgg gca gag gtc tgc 170
Met Ala Asn Val Pro Trp Ala Glu Val Cys
1 5
gag aaa ttc cag gcg gcg ctc gct ctg tgc cgg gtg gaa ctg cat aaa 218
Glu Lys Phe Gln Ala Ala Leu Ala Leu Ser Arg Val Glu Leu His Lys
11 16 21 26
aat ccg gag aag gaa cca tac aag tcc aaa tac agc gcc cgg gcg cta 266
Asn Pro Glu Lys Glu Pro Tyr Lys Ser Lys Tyr Ser Ala Arg Ala Leu
27 32 37 42
ctg gaa gag gtc aag gcg ctg ctc ggc cct gcg cct gag gac gag gat 314
Leu Glu Glu Val Lys Ala Leu Leu Gly Pro Ala Pro Glu Asp Glu Asp
43 48 53 58
gag cgg cct gag gcc gag gac ggc ccg ggt gcc ggt gac cac gcc ctg 362
Glu Arg Pro Glu Ala Glu Asp Gly Pro Gly Ala Gly Asp His Ala Leu
59 64 69 74
ggg ctg ccg gct gag gtg gtg gag ccc gag ggg ccc gtc gcc cag cga 410
Gly Leu Pro Ala Glu Val Val Glu Pro Glu Gly Pro Val Ala Gln Arg
75 80 85 90
gcg gtg agg ctg gca gtc atc gag ttc cac ctc ggg gtg aac cac atc 458
Ala Val Arg Leu Ala Val Ile Glu Phe His Leu Gly Val Asn His Ile
91 96 101 106

gac acg gag gag ctg tcg gcg ggg gag gag cac ctg gtg aaa tgc ctg	506
Asp Thr Glu Glu Leu Ser Ala Gly Glu Glu His Leu Val Lys Cys Leu	
107 112 117 122	
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Arg Leu Leu Arg Arg Tyr Arg Leu Ser His Asp Cys Ile Ser Leu Cys	
123 128 133 138	
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Ile Gln Ala Gln Asn Asn Leu Gly Ile Leu Trp Ser Glu Arg Glu Glu	
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Phe Leu Pro Glu Glu Glu Lys Leu Thr Glu Gln Glu Arg Ser Lys Arg	
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Phe Glu Lys Val Tyr Thr His Asn Leu Tyr Tyr Leu Ala Gln Val Tyr	
203 208 213 218	
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Gln His Leu Glu Met Phe Glu Lys Ala Ala His Tyr Cys His Ser Thr	
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Gln Ile Asp Gly Tyr Val Thr Asp His Ile Glu Val Val Gln Asp His	
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Val Asp Leu Asn Pro Gln Tyr Tyr Leu Leu Val Asn Arg Gln Ile Gln	
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491 496 501 506	
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Val Leu Arg Pro Ala Met Leu Ala Lys Phe Arg Val Ala Arg Leu Tyr	
539 544 549 554	
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571					576					581					586		
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Pro	Glu	Ala	Ala	Gln	Glu	Ile	Glu	Val	Glu	Leu	Glu	Leu	Ser	Lys	Glu		
587					592					597					602		
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Ala	Leu	Thr	*														
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	Met Glu Gln Arg Leu	
	1	
gct gag ttt cgg gcg gcg cgg aaa cgg gcg ggt	ctg gcg gcc caa ccc	163
Ala Glu Phe Arg Ala Ala Arg Lys Arg Ala Gly	Leu Ala Ala Gln Pro	
6	11 16 21	
cct gct gcc agt cag ggc gca caa acc cca gga	gag aag gcg gaa gca	211
Pro Ala Ala Ser Gln Gly Ala Gln Thr Pro Gly	Glu Lys Ala Glu Ala	
22	27 32 37	
gca gcg act cta aag gca gcc cca ggc tgg cta	aag cgg ttc ctg gta	259
Ala Ala Thr Leu Lys Ala Ala Pro Gly Trp Leu	Lys Arg Phe Leu Val	
38	43 48 53	
tgg aaa cct agg ccc gcg agt gcc cgg gcc cag	ccc ggc cta gtt cag	307
Trp Lys Pro Arg Pro Ala Ser Ala Arg Ala Gln	Pro Gly Leu Val Gln	
54	59 64 69	
gaa gcg gct cag ccc cag ggc agc aca tca gag	aca cca tgg aac aca	355
Glu Ala Ala Gln Pro Gln Gly Ser Thr Ser Glu	Thr Pro Trp Asn Thr	
70	75 80 85	
gcc att cct ctg ccg tgc tgc tgg gac cag tct	ttc ctg acc aat atc	403
Ala Ile Pro Leu Pro Ser Cys Trp Asp Gln Ser	Phe Leu Thr Asn Ile	
86	91 96 101	
acc ttc ttg aag gtt ctt ctc tgg ttg gtc ctg	ctg gga ctg ttt gtg	451
Thr Phe Leu Lys Val Leu Leu Trp Leu Val Leu	Leu Gly Leu Phe Val	
102	107 112 117	
gaa ctg gaa ttt ggc ctg gca tat ttt gtc ctg	tcc ttg ttc tat tgg	499
Glu Leu Glu Phe Gly Leu Ala Tyr Phe Val Leu	Ser Leu Phe Tyr Trp	
118	123 128 133	
atg tac gtc ggg aca cga ggc cct gaa gag aag	aaa gag gga gag aag	547
Met Tyr Val Gly Thr Arg Gly Pro Glu Glu Lys	Lys Glu Gly Glu Lys	
134	139 144 149	
agc gcc tac tct gtg ttc aat cca ggc tgt gaa	gcc atc cag ggc acc	595
Ser Ala Tyr Ser Val Phe Asn Pro Gly Cys Glu	Ala Ile Gln Gly Thr	
150	155 160 165	
ctg act gca gag cag ttg gag cgc gag tta cag	ttg aga ccc ctg gca	643
Leu Thr Ala Glu Gln Leu Glu Arg Glu Leu Gln	Leu Arg Pro Leu Ala	
166	171 176 181	
ggg aga tag gacccag ctgtgctgtc atgcagctaa	cctctgatgt ggtcttctc	699
Gly Arg *		
182		
accattggct atggatttga tttcaggtgt ataggactaa	gggcagcttg cgggttagct	759
ctgtgactgc atagtttttc taccttcttt cctgatott	ttgctgccat ttgatctttg	819
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ttatgtactc aaaaaaaaaa aa

901

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<211> 1652
<212> DNA
<213> Homo sapiens

<220>
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<222> (232) .. (975)

<400> 815

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tcttaaagca ccaacattac ttgagtccttt ggataaaatt gagaaaagag tctacaagta	180
ttgtggactc tacaggaggc aggaggctga caactggcag taaagacaaa g atg tca	237
Met Ser	1
ggc ctg cgg ccc ggc act caa gtg gac cct gag att gag ctt ttt gta	285
Gly Leu Arg Pro Gly Thr Gln Val Asp Pro Glu Ile Glu Leu Phe Val	
3 8 13 18	
aag gct gga agt gat gga gag agt att gga aac tgt ccc ttt tgc caa	333
Lys Ala Gly Ser Asp Gly Glu Ser Ile Gly Asn Cys Pro Phe Cys Gln	
19 24 29 34	
cgc ctt ttc atg atc ctc tgg ctt aaa gga gtt aaa ttt aat gtg aca	381
Arg Leu Phe Met Ile Leu Trp Leu Lys Gly Val Lys Phe Asn Val Thr	
35 40 45 50	
act gtt gac atg acc aga aag cct gaa gaa cta aag gac tta gcc cca	429
Thr Val Asp Met Thr Arg Lys Pro Glu Glu Leu Lys Asp Leu Ala Pro	
51 56 61 66	
ggt acc aat cct ccg ttc ctg gtg tat aac aag gag ttg aaa aca gac	477
Gly Thr Asn Pro Pro Phe Leu Val Tyr Asn Lys Glu Leu Lys Thr Asp	
67 72 77 82	
ttc att aaa att gag gag ttt tta gaa caa acc ctg gct cct cca agg	525
Phe Ile Lys Ile Glu Glu Phe Leu Glu Gln Thr Leu Ala Pro Pro Arg	
83 88 93 98	
tac cct cac ctg agt ccc aag tac aag gag tct ttt gat gtg ggc tgt	573
Tyr Pro His Leu Ser Pro Lys Tyr Lys Glu Ser Phe Asp Val Gly Cys	
99 104 109 114	
aac ctc ttt gcc aag ttt tct gca tac att aag aat aca caa aag gag	621
Asn Leu Phe Ala Lys Phe Ser Ala Tyr Ile Lys Asn Thr Gln Lys Glu	
115 120 125 130	

<210> 816
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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (137)..(928)

<220>
 <221> misc_feature
 <222> (1)...(1854)
 <223> n = a,t,c or g

<400> 816

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atacatcgaa ggacac      atg aac ccg aaa atg aaa ggt ttc aca gtg tct      169
                        Met Asn Pro Lys Met Lys Gly Phe Thr Val Ser
                        1          5

ctt aaa agt tta aag cac ttt gat tgt aaa gag aaa cag acg ctt ctg      217
Leu Lys Ser Leu Lys His Phe Asp Cys Lys Glu Lys Gln Thr Leu Leu
 12          17          22          27

aat caa gcc agg gag gac ttc aac cag gac atc ggc tgg tgt gtc tcc      265
Asn Gln Ala Arg Glu Asp Phe Asn Gln Asp Ile Gly Trp Cys Val Ser
 28          33          38          43

ctc atc acc gac tac agg gtc cgg tta ggc tgc ggg tct ttt gct ggc      313
Leu Ile Thr Asp Tyr Arg Val Arg Leu Gly Cys Gly Ser Phe Ala Gly
 44          49          54          59

tct ttc ctg gaa tat tac gcg gct gat ata agc tat cct gtc cga aaa      361
Ser Phe Leu Glu Tyr Tyr Ala Ala Asp Ile Ser Tyr Pro Val Arg Lys
 60          65          70          75

tcc atc cag cag gac gtc ttg ggg acc aag ctt cct caa ctg agc aag      409
Ser Ile Gln Gln Asp Val Leu Gly Thr Lys Leu Pro Gln Leu Ser Lys
 76          81          86          91

ggg agc ccc gag gag ccc gtg gtg ggg tgc ccc ctg ggg cag agg cag      457
Gly Ser Pro Glu Glu Pro Val Val Gly Cys Pro Leu Gly Gln Arg Gln
 92          97          102          107

ccc tgc cgg aaa atg ctc ccc gac cgc tcg cgg gcc gcc cgg gac cgg      505
Pro Cys Arg Lys Met Leu Pro Asp Arg Ser Arg Ala Ala Arg Asp Arg
108          113          118          123

gcc aac cag aag ctg gtg gag tac att gtg aag gcc aag ggc gcg gag      553
Ala Asn Gln Lys Leu Val Glu Tyr Ile Val Lys Ala Lys Gly Ala Glu
124          /          129          134          139

agc cac ctg cgg gcc atc cta aag agc agg aag cca tct cgc tgg ctg      601

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Ser His Leu Arg Ala Ile Leu Lys Ser Arg Lys Pro Ser Arg Trp Leu	
140 145 150 155	
cag acc ttc ctg agc tcc agc cag tac gtg acc tgt gtg gag acc tac	649
Gln Thr Phe Leu Ser Ser Ser Gln Tyr Val Thr Cys Val Glu Thr Tyr	
156 161 166 171	
ctg gag gat gag ggg cag ctg gac ctg gtg gtg aag tac ctg cag ggc	697
Leu Glu Asp Glu Gly Gln Leu Asp Leu Val Val Lys Tyr Leu Gln Gly	
172 177 182 187	
gtc tac cag gag gtg ggg gcc aag gtg ctc cag cgc acc aac ggc gac	745
Val Tyr Gln Glu Val Gly Ala Lys Val Leu Gln Arg Thr Asn Gly Asp	
188 193 198 203	
cgg atc cgg ttc att ctg gac gtg ctt ctg ccc gag gcc atc atc tgt	793
Arg Ile Arg Phe Ile Leu Asp Val Leu Leu Pro Glu Ala Ile Ile Cys	
204 209 214 219	
gcg atc tct gcg gtg gac gag gtg gac tac aag acg gct gag gag aag	841
Ala Ile Ser Ala Val Asp Glu Val Asp Tyr Lys Thr Ala Glu Glu Lys	
220 225 230 235	
tac atc aag ggg cct tcg ctg agc tac cgg gaa aaa gaa ata ttt gac	889
Tyr Ile Lys Gly Pro Ser Leu Ser Tyr Arg Glu Lys Glu Ile Phe Asp	
236 241 246 251	
aac cag ctc ctt gaa gag cgg aac cgg cgc cgt cgg tga gggagcagcc	938
Asn Gln Leu Leu Glu Glu Arg Asn Arg Arg Arg *	
252 257 262	
ggctgtgctg tcagcggggc ctggcgggtg aagcgcctcc agtgtgcatg agcgtgtctg	998
aagatggggg gctcaggggg cacgtttgcg tttggacctg tctgtgcgtt ctctgcgtg	1058
gcagtcctga tttccatact tctggagaat ccatttcgtt aacactgaaa gccagttctc	1118
ttttcctggc agtttttttc attttatttt tggcattttt tacaagatac cgttcgggaa	1178
aggcttttga aaggacggaa gcgtattcac tgtgcgccag tactcctggc tgtgctgtgg	1238
tttctcccga cgtgcacatc gatctcgtat gtgtggcatc tgatattaaa cgggaggttt	1298
taagaagcgt ctgccgtgat catggagctt cggaagcggg aatggttctt ccgggtttgc	1358
tgttttgtct gtttccccct tgtgtggttt ccgcctgcga cagttccaga atttgctctc	1418
ccactcagtg tgctctgcag ctgtgaggaa acagccttcg ttagaggcgg gagcagagac	1478
gagccgctgc tctgtgtcgt gtttgctgtg gctgcagggg gaggagcggg acacgcacct	1538
ttccaggggc ctctgtgtcc cgcactgtgt gtgagtggac cgcagcggca gccacatgcc	1598
ctggctgcca tggggcagac cgcctccacc tgccccgccc gtctgggcct gttctgagtg	1658
catttcctg cactgtgtcg tcaactgcaca gccagtcacc gcggtctcag tcaatcngcg	1718

cggatggcta tgcttgggggt tccaggggtng gccccaaagag ttcaggggtca tcttgggggag 1778
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tttgtattgg gagtgg 1854

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<212> DNA
<213> Homo sapiens

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<222> (90)..(581)

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gggatttatt ttatgtggct ttctctgaa atg cca aag cca ccc gat tat tca 113
Met Pro Lys Pro Pro Asp Tyr Ser
1 5
gag ctg agt gac tct tta acg ctt gcc gtg gga aca gga aga ttt tcg 161
Glu Leu Ser Asp Ser Leu Thr Leu Ala Val Gly Thr Gly Arg Phe Ser
9 14 19 24
gga cca ttg cac aga gca tgg aga atg atg aac ttc cgt cag cgg atg 209
Gly Pro Leu His Arg Ala Trp Arg Met Met Asn Phe Arg Gln Arg Met
25 30 35 40
gga tgg att gga gtg gga ttg tat ctg tta gcc agt gca gca gca ttt 257
Gly Trp Ile Gly Val Gly Leu Tyr Leu Leu Ala Ser Ala Ala Ala Phe
41 46 51 56
tac tat gtt ttt gaa atc agt gag act tac aac agg ctg gcc ttg gaa 305
Tyr Tyr Val Phe Glu Ile Ser Glu Thr Tyr Asn Arg Leu Ala Leu Glu
57 62 67 72
cac att caa cag cac cct gag gag ccc ctt gaa gga acc aca tgg aca 353
His Ile Gln Gln His Pro Glu Glu Pro Leu Glu Gly Thr Thr Trp Thr
73 78 83 88
cac tcc ttg aaa gct caa tta ctc tcc ttg cct ttt tgg gtg tgg aca 401
His Ser Leu Lys Ala Gln Leu Leu Ser Leu Pro Phe Trp Val Trp Thr
89 94 99 104
gtt att ttt ctg gta cct tac tta cag atg ttt ttg ttc cta tac tct 449
Val Ile Phe Leu Val Pro Tyr Leu Gln Met Phe Leu Phe Leu Tyr Ser
105 110 115 120
tgt aca aga gct gat ccc aaa aca gtg ggc tac tgt atc atc cct ata 497
Cys Thr Arg Ala Asp Pro Lys Thr Val Gly Tyr Cys Ile Ile Pro Ile
121 126 131 136

tgc ttg gca gtt att tgc aat cgc cac cag gca ttt gtc aag gct tct 545
 Cys Leu Ala Val Ile Cys Asn Arg His Gln Ala Phe Val Lys Ala Ser
 137 142 147 152

aat cag atc agc aga cta caa ctg att gac acg taa aatc agtcaccgtt 595
 Asn Gln Ile Ser Arg Leu Gln Leu Ile Asp Thr *
 153 158 163

ttttccctac gattacaaaa ctgccagtcc tatatggagt ctgatcacao gactgcagtt 655

tcttcacaga tctcaggaag ttgtcgtggg gcagaggctt tttaaaaaaca tgtgattagg 715

gagctatctt tatctgaata ataacgaatt tttaggtaaa acctgagata gagtactaca 775

aaatcatgtt gatgacttca gatttttgaa gttaaactcat gtctgttatt tgcattcttt 835

agaaacttga ctaagtacct gaattcatat ttctattcta ctgtgcaaca tagtgatgat 895

tcagaaattt ttcctttggg gaaaaaaatg aatatgaaca tttccattgt gttaagtgt 955

aaaagggtcca gacatgatca taaaatttaa attttataca aaaaaaaaaa aa 1007

<210> 818
 <211> 1317
 <212> DNA
 <213> Homo sapiens
 <220>
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 <222> (446) .. (931)

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attattagta gagctccctt tcaactgtcaa atttccggtt ggggataaat tgcattgtcg 180

ttttggtttg agataggaag atgaggggag gaaggagggt aggcggtaag gggcggttctc 240

tctcttgggt cccgcgcccc acttccgctg gcccaaagaa actataattt tgaaccaaca 300

gacctctgct ggcatctgct attgcatttt tctgtttta acaacggctg tgctagacga 360

agtgggtgaag cccaaagact tatttttgag ctgctgttaa gactgagaaa tcacgtagtc 420

cttcctgaaa ccactaagag gaaaa atg tct gtg aca ctg cat aca gat gta 472
 Met Ser Val Thr Leu His Thr Asp Val
 1 5

ggg gat att aaa att gaa gtc ttc tgt gag agg aca ccc aaa aca tgt 520
 Gly Asp Ile Lys Ile Glu Val Phe Cys Glu Arg Thr Pro Lys Thr Cys
 10 15 20 25

90	95	100	
cca tct gaa gat act cag caa gaa aat ggc agc atg ttc tct ctc att Pro Ser Glu Asp Thr Gln Gln Glu Asn Gly Ser Met Phe Ser Leu Ile 105 110 115			389
acc tgg aat att gat gga tta gat cta aac aat ctg tca gag agg gct Thr Trp Asn Ile Asp Gly Leu Asp Leu Asn Asn Leu Ser Glu Arg Ala 120 125 130			437
cga ggg gtg tgt tcc tac tta gct ttg tac agc cca gat gtg ata ttt Arg Gly Val Cys Ser Tyr Leu Ala Leu Tyr Ser Pro Asp Val Ile Phe 135 140 145			485
cta cag gaa gtt att ccc cca tat tat agc tac cta aag aag aga tca Leu Gln Glu Val Ile Pro Pro Tyr Tyr Ser Tyr Leu Lys Lys Arg Ser 150 155 160 165			533
agt aat tat gag att att aca ggt cat gaa gaa gga tat ttc aca gct Ser Asn Tyr Glu Ile Ile Thr Gly His Glu Glu Gly Tyr Phe Thr Ala 170 175 180			581
ata atg ttg aag aaa tca aga gtg aaa tta aaa agc caa gag att att Ile Met Leu Lys Lys Ser Arg Val Lys Leu Lys Ser Gln Glu Ile Ile 185 190 195			629
cct ttt cca agt acc aaa atg atg aga aac ctt tta tgt gtg cat gtg Pro Phe Pro Ser Thr Lys Met Met Arg Asn Leu Leu Cys Val His Val 200 205 210			677
aat gtg tca gga aat gag ctt tgc ctt atg aca tcc cat ttg gag agc Asn Val Ser Gly Asn Glu Leu Cys Leu Met Thr Ser His Leu Glu Ser 215 220 225			725
acc aga ggg cat gct gcg gaa cga atg aat cag tta aaa atg gtt tta Thr Arg Gly His Ala Ala Glu Arg Met Asn Gln Leu Lys Met Val Leu 230 235 240 245			773
aag aaa atg caa gag gct cca gag tca gct aca gtt ata ttt gca gga Lys Lys Met Gln Glu Ala Pro Glu Ser Ala Thr Val Ile Phe Ala Gly 250 255 260			821
gat aca aat cta agg gat cga gag gtt acc aga tgt ggt ggt tta ccc Asp Thr Asn Leu Arg Asp Arg Glu Val Thr Arg Cys Gly Gly Leu Pro 265 270 275			869
aac aac att gtg gat gtc tgg gag ttt ttg ggc aaa cct aaa cat tgc Asn Asn Ile Val Asp Val Trp Glu Phe Leu Gly Lys Pro Lys His Cys 280 285 290			917
cag tat aca tgg gat aca caa atg aac tct aat ctt gga ata act gct Gln Tyr Thr Trp Asp Thr Gln Met Asn Ser Asn Leu Gly Ile Thr Ala 295 300 305			965
gct tgt aaa ctt cgt ttt gat cga ata ttt ttc aga gca gca gca gaa Ala Cys Lys Leu Arg Phe Asp Arg Ile Phe Phe Arg Ala Ala Ala Glu 310 315 320 325			1013
gag gga cac att att ccc cga agt ttg gac ctt ctt gga tta gaa aaa Glu Gly His Ile Ile Pro Arg Ser Leu Asp Leu Leu Gly Leu Glu Lys 330 335 340			1061

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 agccgctgcc ggggtgccga gggccgctcgt ggccgccgct gccacgggtc cca atg 176
 Met
 1
 gag ccg ccg aat ctc tat ccg gtg aag ctc tac gtg tac gac ctg tcc 224
 Glu Pro Pro Asn Leu Tyr Pro Val Lys Leu Tyr Val Tyr Asp Leu Ser
 2 7 12 17
 aaa ggc ctg gcc cgg cgg ctc agc ccc atc atg ctg ggg aaa caa ctg 272
 Lys Gly Leu Ala Arg Arg Leu Ser Pro Ile Met Leu Gly Lys Gln Leu
 18 23 28 33
 gaa ggc atc tgg cac aca tcc ata gtt gtg cac aag gat gag ttc ttc 320
 Glu Gly Ile Trp His Thr Ser Ile Val Val His Lys Asp Glu Phe Phe
 34 39 44 49
 ttc ggc agt ggt ggt atc tcc agc tgc ccc ccg gga ggg aca ttg ctt 368
 Phe Gly Ser Gly Gly Ile Ser Ser Cys Pro Pro Gly Gly Thr Leu Leu
 50 55 60 65
 ggg cct cca gac tct gtg gtt gat gtg ggg agt aca gaa gtc aca gaa 416
 Gly Pro Pro Asp Ser Val Val Asp Val Gly Ser Thr Glu Val Thr Glu
 66 71 76 81
 gaa atc ttt ctg gag tac ctc tcc tcc ctg ggg gag tcc ctg ttc cga 464
 Glu Ile Phe Leu Glu Tyr Leu Ser Ser Leu Gly Glu Ser Leu Phe Arg
 82 87 92 97
 ggt gag gcc tac aac ctc ttt gaa cac aat tgt aac acc ttc agc aac 512
 Gly Glu Ala Tyr Asn Leu Phe Glu His Asn Cys Asn Thr Phe Ser Asn
 98 103 108 113
 gaa gtg gca cag ttc ctg act ggg cgg aag att cct tct tac atc aca 560
 Glu Val Ala Gln Phe Leu Thr Gly Arg Lys Ile Pro Ser Tyr Ile Thr
 114 119 124 129
 gac ctg ccc tct gaa gtt ctc tcc acg ccc ttt gga cag gca ctt cgg 608
 Asp Leu Pro Ser Glu Val Leu Ser Thr Pro Phe Gly Gln Ala Leu Arg
 130 135 140 145
 ccc ctc ctg gac tcc att cag atc cag cct cca gga ggg agc tcc gtg 656
 Pro Leu Leu Asp Ser Ile Gln Ile Gln Pro Pro Gly Gly Ser Ser Val

146	151	156	161	
ggc aga ccc aac ggc cag agc taa caggactgcc tgggaccgcc ctgcctcacc				710
Gly Arg Pro Asn Gly Gln Ser *				
162	167			
agggccttttc ccttttttaaa caaaacaaaac cctaccagat ttctatttta taattttaca				770
tcagagctaa caaccagggg acggccttttt aaatttccca gggaaggaga ccgtcaggcc				830
gcatgtagac aatgctgcta agaaacagaa caaaatgccca ccccttctaa tagtattata				890
ctaattttatt aaaaaaaaaa aaa				913

<210> 820
 <211> 1767
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (153)..(1223)

<220>
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 <222> (1)...(1767)
 <223> n = a,t,c or g

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ttgccgggttt ggcgggggtga aaggttgcca ag atg gcg acg gcc ttg agc gag	173
Met Ala Thr Ala Leu Ser Glu	
1 5	
gag gag ctg gac aat gaa gac tat tac tcg ttg ctg aac gtg cgc agg	221
Glu Glu Leu Asp Asn Glu Asp Tyr Tyr Ser Leu Leu Asn Val Arg Arg	
8 13 18 23	
gag gcc tct tct gaa gag ctg aaa gct gcc tac cgg agg ctc tgt atg	269
Glu Ala Ser Ser Glu Glu Leu Lys Ala Ala Tyr Arg Arg Leu Cys Met	
24 29 34 39	
ctc tac cat cca gac aag cac aga gac cca gag ctc aag tca cag gcg	317
Leu Tyr His Pro Asp Lys His Arg Asp Pro Glu Leu Lys Ser Gln Ala	
40 45 50 55	
gaa cga ctg ttt aac ctt gtt cac cag gct tat gaa gtg ctt agt gac	365
Glu Arg Leu Phe Asn Leu Val His Gln Ala Tyr Glu Val Leu Ser Asp	
56 61 66 71	
ccc caa acc agg gcc atc tat gat ata tat ggg aag aga gga ctg gaa	413

Pro Gln Thr Arg Ala Ile Tyr Asp Ile Tyr Gly Lys Arg Gly Leu Glu	
72 . 77 82 87	
atg gaa gga tgg gag gtt gtg gaa agg agg aga acc cct gct gaa att	461
Met Glu Gly Trp Glu Val Val Glu Arg Arg Arg Thr Pro Ala Glu Ile	
88 93 98 103	
cga gag gag ttt gag cgg ctg cag aga gag aga gaa gag agg aga ttg	509
Arg Glu Glu Phe Glu Arg Leu Gln Arg Glu Arg Glu Glu Arg Arg Leu	
104 109 114 119	
cag cag cga acc aat ccc aag gga acg atc agc gtt gga gta gat gcc	557
Gln Gln Arg Thr Asn Pro Lys Gly Thr Ile Ser Val Gly Val Asp Ala	
120 125 130 135	
acc gac ctt ttt gat cgc tat gat gag gag tat gaa gat gtg tcc ggc	605
Thr Asp Leu Phe Asp Arg Tyr Asp Glu Glu Tyr Glu Asp Val Ser Gly	
136 141 146 151	
agt agc ttt ccg cag att gaa att aat aaa atg cac ata tcc cag tcc	653
Ser Ser Phe Pro Gln Ile Glu Ile Asn Lys Met His Ile Ser Gln Ser	
152 157 162 167	
att gag gca ccc ttg aca gcg aca gac aca gcc atc ctc tct gga agc	701
Ile Glu Ala Pro Leu Thr Ala Thr Asp Thr Ala Ile Leu Ser Gly Ser	
168 173 178 183	
ctc tca acc cag aat gga aat gga gga ggt tcc att aac ttt gcg ctc	749
Leu Ser Thr Gln Asn Gly Asn Gly Gly Gly Ser Ile Asn Phe Ala Leu	
184 189 194 199	
aga cga gta act tcg gca aag gga tgg gga gag ttg gaa ttt gga gct	797
Arg Arg Val Thr Ser Ala Lys Gly Trp Gly Glu Leu Glu Phe Gly Ala	
200 205 210 215	
gga gac cta cag ggg cct ttg ttc ggt ctc aag ctg ttc cgt aat ctc	845
Gly Asp Leu Gln Gly Pro Leu Phe Gly Leu Lys Leu Phe Arg Asn Leu	
216 221 226 231	
aca cca aga tgc ttt gtg aca aca aac tgt gct ctg cag ttt tca tcc	893
Thr Pro Arg Cys Phe Val Thr Thr Asn Cys Ala Leu Gln Phe Ser Ser	
232 237 242 247	
cgt gga atc cga ccc ggc ctg acc act gtc cta gct cgg aac cta gac	941
Arg Gly Ile Arg Pro Gly Leu Thr Thr Val Leu Ala Arg Asn Leu Asp	
248 253 258 263	
aag aac acc gtg ggc tac ctg cag tgg cac tgc agc tcc ccg ctc ctg	989
Lys Asn Thr Val Gly Tyr Leu Gln Trp His Cys Ser Ser Pro Leu Leu	
264 269 274 279	
cag gtc cag cgt cct cac agg aac acc agg gcc tgt gct ccg gag cct	1037
Gln Val Gln Arg Pro His Arg Asn Thr Arg Ala Cys Ala Pro Glu Pro	
280 285 290 295	
tcc ttc aga ccc ttc ctc cac gtg ccc act tgg gat gca gaa tgc agc	1085
Ser Phe Arg Pro Phe Leu His Val Pro Thr Trp Asp Ala Glu Cys Ser	

296	301	306	311	
gga gct agg acc ccc tcc acg gcc tgg acc tgc gct gca gta aag tta				1133
Gly Ala Arg Thr Pro Ser Thr Ala Trp Thr Ser Ala Ala Val Lys Leu				
312	317	322	327	
cg t gag gcc tgt ctc tgc ggg cct gga agt ggc agc cat cag ttg ctc				1181
Arg Glu Ala Cys Leu Ser Gly Pro Gly Ser Gly Ser His Gln Leu Leu				
328	333	338	343	
ttg ctg acc cct cgg agc aag cgc cgc aca ggt ggt ggc tga gacagct				1230
Leu Leu Thr Pro Arg Ser Lys Arg Arg Thr Gly Gly Gly *				
344	349	354		
ggcgcggggg gcccgaagct gcgcggcct ccagcccacc cacagctgtt gctgaagtca				1290
ggcctccctc cccagcactg gtatctgagt aacggctaag aacctcctc ctctgggttt				1350
gaaaagcagt tcgggttgtc caattctgta acattcatct ccatttttta aaaagggttc				1410
tctgacggcc ccacggcccg agccgcggtg agcgtcgtgt tgcattgagcc tgggccccgg				1470
gcttcccgctg cgcctctgcc gcagggtgctt ctgggcaccc atcctctgcg tttcatttgc				1530
agtcgactgt acagaaggca ctcaccacaa taaaccttctc ctgaaagcag aggctggcgc				1590
tcttccgtgt actgtgtgtt catcttcagg agggagggaa ccccttcccc agaggcctcc				1650
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cgacggaaac c atg ttt gtg gct cgc agc atc gcg gcg gac cac aag gat	170
Met Phe Val Ala Arg Ser Ile Ala Ala Asp His Lys Asp	
1 5 10	
ctc atc cac gat gtc tct ttc gac ttc cac ggg cgg cgg atg gca acc	218
Leu Ile His Asp Val Ser Phe Asp Phe His Gly Arg Arg Met Ala Thr	
14 19 24 29	

tgc tcc agc gat cag agc gtt aag gtc tgg gat aaa agt gaa agt ggt	266
Cys Ser Ser Asp Gln Ser Val Lys Val Trp Asp Lys Ser Glu Ser Gly	
30 35 40 45	
gat tgg cat tgt act gct agc tgg aag aca cat agt gga tct gta tgg	314
Asp Trp His Cys Thr Ala Ser Trp Lys Thr His Ser Gly Ser Val Trp	
46 51 56 61	
cgt gtg aca tgg gcc cat cct gaa ttt ggg cag gtt ttg gct tcc tgt	362
Arg Val Thr Trp Ala His Pro Glu Phe Gly Gln Val Leu Ala Ser Cys	
62 67 72 77	
tct ttt gac cga aca gct gct gta tgg gaa gaa ata gta gga gaa tca	410
Ser Phe Asp Arg Thr Ala Ala Val Trp Glu Glu Ile Val Gly Glu Ser	
78 83 88 93	
aat gat aaa ctg cga gga cag agc cac tgg gtt aaa agg aca act ctg	458
Asn Asp Lys Leu Arg Gly Gln Ser His Trp Val Lys Arg Thr Thr Leu	
94 99 104 109	
gtg gat agc aaa aca tct gtt act gat gtg aag ttt gct ccc aag cac	506
Val Asp Ser Lys Thr Ser Val Thr Asp Val Lys Phe Ala Pro Lys His	
110 115 120 125	
atg ggt ctt atg tta gca acc tgt tcc gca gat ggt ata gta aga atc	554
Met Gly Leu Met Leu Ala Thr Cys Ser Ala Asp Gly Ile Val Arg Ile	
126 131 136 141	
tat gag gca cca gat gtt atg aat ctc agc cag tgg tct ttg cag cat	602
Tyr Glu Ala Pro Asp Val Met Asn Leu Ser Gln Trp Ser Leu Gln His	
142 147 152 157	
gag atc tca tgt aag cta agc tgt agt tgt att tct tgg aac cct tca	650
Glu Ile Ser Cys Lys Leu Ser Cys Ser Cys Ile Ser Trp Asn Pro Ser	
158 163 168 173	
agc tct cgt gct cat tcc ccc atg atc gcc gta gga agt gat gac agt	698
Ser Ser Arg Ala His Ser Pro Met Ile Ala Val Gly Ser Asp Asp Ser	
174 179 184 189	
agc ccc aac gca atg gcc aag gtt cag att ttt gaa tat aat gaa aac	746
Ser Pro Asn Ala Met Ala Lys Val Gln Ile Phe Glu Tyr Asn Glu Asn	
190 195 200 205	
acc agg aaa tat gca aaa gct gaa act ctt atg aca gtc act gat cct	794
Thr Arg Lys Tyr Ala Lys Ala Glu Thr Leu Met Thr Val Thr Asp Pro	
206 211 216 221	
gtt cat gat att gca ttc gct cca aat ttg gga aga tct ttc cat att	842
Val His Asp Ile Ala Phe Ala Pro Asn Leu Gly Arg Ser Phe His Ile	
222 227 232 237	
cta gca ata gcg acc aaa gat gtg aga att ttt aca tta aag cct gtg	890
Leu Ala Ile Ala Thr Lys Asp Val Arg Ile Phe Thr Leu Lys Pro Val	
238 243 248 253	
agg aaa gaa ctg act tcc tct ggt ggg cca aca aag ttt gaa atc cat	938

Arg Lys Glu Leu Thr Ser Ser Gly Gly Pro Thr Lys Phe Glu Ile His	
254 259 264 269	
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Ile Val Ala Gln Phe Asp Asn His Asn Ser Gln Val Trp Arg Val Ser	
270 275 280 285	
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Trp Asn Ile Thr Gly Thr Val Leu Ala Ser Ser Gly Asp Asp Gly Cys	
286 291 296 301	
gta aga ttg tgg aaa gct aat tat atg gac aat tgg aag tgt act ggt	1082
Val Arg Leu Trp Lys Ala Asn Tyr Met Asp Asn Trp Lys Cys Thr Gly	
302 307 312 317	
att ttg aaa ggt aat ggg agc cca gtc aat ggg agt tct cag cag gga	1130
Ile Leu Lys Gly Asn Gly Ser Pro Val Asn Gly Ser Ser Gln Gln Gly	
318 323 328 333	
acc tca aat cct tcc cta ggt tca aat att cca agt ctt cag aat tca	1178
Thr Ser Asn Pro Ser Leu Gly Ser Asn Ile Pro Ser Leu Gln Asn Ser	
334 339 344 349	
tta aat gga tct tct gct ggc aga aag cac agc tga gtac aagctaactg	1228
Leu Asn Gly Ser Ser Ala Gly Arg Lys His Ser *	
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cgacggaaac c atg ttt gtg gct cgc agc atc gcg gcg gac cac aag gat	170

Met Phe Val Ala Arg Ser Ile Ala Ala Asp His Lys Asp
 1 5 10

ctc atc cac gat gtc tct ttc gac ttc cac ggg cgg cgg atg gca acc	218
Leu Ile His Asp Val Ser Phe Asp Phe His Gly Arg Arg Met Ala Thr	
14 19 24 29	
tgc tcc agc gat cag agc gtt aag gtc tgg gat aaa agt gaa agt ggt	266
Cys Ser Ser Asp Gln Ser Val Lys Val Trp Asp Lys Ser Glu Ser Gly	
30 35 40 45	
gat tgg cat tgt act gct agc tgg aag gtt aaa agg aca act ctg gtg	314
Asp Trp His Cys Thr Ala Ser Trp Lys Val Lys Arg Thr Thr Leu Val	
46 51 56 61	
gat agc aaa aca tct gtt act gat gtg aag ttt gct ccc aag cac atg	362
Asp Ser Lys Thr Ser Val Thr Asp Val Lys Phe Ala Pro Lys His Met	
62 67 72 77	
ggt ctt atg tta gca acc tgt tcc gca gat ggt ata gta aga atc tat	410
Gly Leu Met Leu Ala Thr Cys Ser Ala Asp Gly Ile Val Arg Ile Tyr	
78 83 88 93	
gag gca cca gat gtt atg aat ctc agc cag tgg tct ttg cag cat gag	458
Glu Ala Pro Asp Val Met Asn Leu Ser Gln Trp Ser Leu Gln His Glu	
94 99 104 109	
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Ile Ser Cys Lys Leu Ser Cys Ser Cys Ile Ser Trp Asn Pro Ser Ser	
110 115 120 125	
tct cgt gct cat tcc ccc atg atc gcc gta gga agt gat gac agt agc	554
Ser Arg Ala His Ser Pro Met Ile Ala Val Gly Ser Asp Asp Ser Ser	
126 131 136 141	
ccc aac gca atg gcc aag gtt cag att ttt gaa tat aat gaa aac acc	602
Pro Asn Ala Met Ala Lys Val Gln Ile Phe Glu Tyr Asn Glu Asn Thr	
142 147 152 157	
agg aaa tat gca aaa gct gaa act ctt atg aca gtc act gat cct gtt	650
Arg Lys Tyr Ala Lys Ala Glu Thr Leu Met Thr Val Thr Asp Pro Val	
158 163 168 173	
cat gat att gca ttc gct cca aat ttg gga aga tct ttc cat att cta	698
His Asp Ile Ala Phe Ala Pro Asn Leu Gly Arg Ser Phe His Ile Leu	
174 179 184 189	
gca ata gcg acc aaa gat gtg aga att ttt aca tta aag cct gtg agg	746
Ala Ile Ala Thr Lys Asp Val Arg Ile Phe Thr Leu Lys Pro Val Arg	
190 195 200 205	
aaa gaa ctg act tcc tct ggt ggg cca aca aag ttt gaa atc cat ata	794
Lys Glu Leu Thr Ser Ser Gly Gly Pro Thr Lys Phe Glu Ile His Ile	
206 211 216 221	
gtg gct cag ttc gat aat cat aat tct cag gtc tgg cga gtg agt tgg	842
Val Ala Gln Phe Asp Asn His Asn Ser Gln Val Trp Arg Val Ser Trp	

222	227	232	237	
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Asn Ile Thr Gly Thr Val Leu Ala Ser Ser Gly Asp Asp Gly Cys Val				
238	243	248	253	
aga ttg tgg aaa gct aat tat atg gac aat tgg aag tgt act ggt att				938
Arg Leu Trp Lys Ala Asn Tyr Met Asp Asn Trp Lys Cys Thr Gly Ile				
254	259	264	269	
ttg aaa ggt aat ggg agc cca gtc aat ggg agt tct cag cag gga acc				986
Leu Lys Gly Asn Gly Ser Pro Val Asn Gly Ser Ser Gln Gln Gly Thr				
270	275	280	285	
tca aat cct tcc cta ggt tca aat att cca agt ctt cag aat tca tta				1034
Ser Asn Pro Ser Leu Gly Ser Asn Ile Pro Ser Leu Gln Asn Ser Leu				
286	291	296	301	
aat gga tct tct gct ggc aga aag cac agc tga gtacaagc taactggagt				1085
Asn Gly Ser Ser Ala Gly Arg Lys His Ser *				
302	307	312		
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ccttccccag cgccgtttga cctctcccaa gatacaccag cagcctgctt actactaaac				1205
gcaatccaaa aggcctttta aaatacagtg tatatttttt gtactagtca gtttattgac				1265
actatttgaa acttttgaaa tataaacgga gaggcctttct gttgagacat tgtcaccaaa				1325
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acctccatta gaccaagtgc aggaggagga atgtgaagta gaaaggggtga ctgaacatgg	180
gacaccaaag ccctttcgaa agtttgacag tgtagctttt ggagaaagtc aaagtgagga	240
tgaacaattt gaaaatgact tagagacaga cccacccaac tggcagcagc ttgttagtcg	300

att ctt gta ttg tta caa aag cag gat gat aga ctg gtt tta agg tgt	1159
Ile Leu Val Leu Leu Gln Lys Gln Asp Asp Arg Leu Val Leu Arg Cys	
198 203 208 213	
cat agt aag att ctg gca tct aca gct gat agc aaa cac acg ttt agc	1207
His Ser Lys Ile Leu Ala Ser Thr Ala Asp Ser Lys His Thr Phe Ser	
214 219 224 229	
cct gtc att aag ttg agt aca gtg ttg gtt cga caa gtg gca aca gat	1255
Pro Val Ile Lys Leu Ser Thr Val Leu Val Arg Gln Val Ala Thr Asp	
230 235 240 245	
aac aaa gct tta ttc gtc att tcc atg tca gac aat ggc gct cag att	1303
Asn Lys Ala Leu Phe Val Ile Ser Met Ser Asp Asn Gly Ala Gln Ile	
246 251 256 261	
tat gaa ctg gtg gca cag aca gtt tct gaa aag act gtc tgg cag gac	1351
Tyr Glu Leu Val Ala Gln Thr Val Ser Glu Lys Thr Val Trp Gln Asp	
262 267 272 277	
cta atc tgt cgg atg gct gca tca gtg aag gag caa tcc aca aag cca	1399
Leu Ile Cys Arg Met Ala Ala Ser Val Lys Glu Gln Ser Thr Lys Pro	
278 283 288 293	
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Ile Pro Leu Pro Gln Ser Thr Pro Gly Glu Gly Asp Asn Asp Glu Glu	
294 299 304 309	
gat cct tca aaa tta aaa gag gag cag cat ggc att tca gtc act ggt	1495
Asp Pro Ser Lys Leu Lys Glu Glu Gln His Gly Ile Ser Val Thr Gly	
310 315 320 325	
ttg cag agt cca gac aga gat ttg gga tta gaa tct acc tta ata tcg	1543
Leu Gln Ser Pro Asp Arg Asp Leu Gly Leu Glu Ser Thr Leu Ile Ser	
326 331 336 341	
tca aaa cct cag tct cat tca ctg agt acc tct ggg aaa tca gag gta	1591
Ser Lys Pro Gln Ser His Ser Leu Ser Thr Ser Gly Lys Ser Glu Val	
342 347 352 357	
cgt gat ctg ttt gtg gct gag aga cag ttt gca aag gaa caa cat aca	1639
Arg Asp Leu Phe Val Ala Glu Arg Gln Phe Ala Lys Glu Gln His Thr	
358 363 368 373	
gat ggg aca cta aag gaa gtt gga gaa gat tat caa atc gca atc cca	1687
Asp Gly Thr Leu Lys Glu Val Gly Glu Asp Tyr Gln Ile Ala Ile Pro	
374 379 384 389	
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Asp Ser His Leu Pro Val Ser Glu Glu Arg Trp Ala Leu Asp Ala Leu	
390 395 400 405	
aga aat ttg ggt ttg ttg aag cag ttg ctg gtg caa cag cta ggt ttg	1783
Arg Asn Leu Gly Leu Leu Lys Gln Leu Leu Val Gln Gln Leu Gly Leu	
406 411 416 421	

act gag aag agc gtt cag gaa gac tgg caa cat ttc cca aga tac aga	1831
Thr Glu Lys Ser Val Gln Glu Asp Trp Gln His Phe Pro Arg Tyr Arg	
422 427 432 437	
aca gcc tct cag ggg ccg cag aca gac agt gtc atc cag aac tct gaa	1879
Thr Ala Ser Gln Gly Pro Gln Thr Asp Ser Val Ile Gln Asn Ser Glu	
438 443 448 453	
aat att aag gcc tat cat tct ggt gaa gga cat atg ccc ttt aga act	1927
Asn Ile Lys Ala Tyr His Ser Gly Glu Gly His Met Pro Phe Arg Thr	
454 459 464 469	
gga act ggt gac att gca act tgt tac agt cca cgg act tca act gaa	1975
Gly Thr Gly Asp Ile Ala Thr Cys Tyr Ser Pro Arg Thr Ser Thr Glu	
470 475 480 485	
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486 491 496 501	
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Ala Ser Asn Ile Leu Val Met Asp His Met Ile Met Thr Pro Glu Met	
502 507 512 517	
cct acc atg gag cca gaa ggg ggt ctt gat gac agt gga gag cac ttt	2119
Pro Thr Met Glu Pro Glu Gly Gly Leu Asp Asp Ser Gly Glu His Phe	
518 523 528 533	
ttt gat gcc cgt gaa gca cat agt gat gag aat cca tca gaa ggt gat	2167
Phe Asp Ala Arg Glu Ala His Ser Asp Glu Asn Pro Ser Glu Gly Asp	
534 539 544 549	
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Gly Ala Val Asn Lys Glu Glu Lys Asp Val Asn Leu Arg Ile Ser Gly	
550 555 560 565	
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Asn Tyr Leu Ile Leu Asp Gly Tyr Asp Pro Val Gln Glu Ser Ser Thr	
566 571 576 581	
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Asp Glu Glu Val Ala Ser Ser Leu Thr Leu Gln Pro Met Thr Gly Ile	
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His Ser Asp Gly Ala Ile Ser Pro Phe Thr Pro Glu Phe Leu Val Gln	
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Gln Arg Trp Gly Ala Met Glu Tyr Ser Cys Phe Glu Ile Gln Ser Pro	
630 635 640 645	
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Ser Ser Cys Ala Asp Ser Gln Ser Gln Ile Met Glu Tyr Ile His Lys	
646 651 656 661	
ata gag gct gac ctt gaa cac tta aag aag gtg gag gaa agt tac acc	2551
Ile Glu Ala Asp Leu Glu His Leu Lys Lys Val Glu Glu Ser Tyr Thr	
662 667 672 677	
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678 683 688 693	
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Asp Lys Ser *	
694	
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 gaaaatccag aattggcaga tttggataag ttgaggtata ggcattgcct tacaacactt 180
 acagtcccaa gaagatgtat aggatttgca aggaggcgaa ttggcagagg tggaagggtc 240
 ataatggacc gaatatccac agaacatgac ccagtcctga aacagataga ccctgaaatg 300
 ctgaatagtt tttcaagctc ttcccaaact atagactttt cttctaattt ctctcggacc 360

gctgatggtg tgcagtcatt catattccag ctgaatgcaa aaggcaacac tctgtggatc 1232
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 atgtatatatt tgtaaaattg ggaaaatcac taccttgtaa aatagtttat ttgtatcatc 1352
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 gcaactgaat ggatttttaa aaataattct ttaatgggat catgagcatg aaatgggatc 1472
 ctgcatcact tgttttaact atttattttg ccatgtttac attttgtatc ttgtaaaaat 1532
 aaatccaact ttgtgtctaa aaagttaaag attcatagct aggaaatgaa attcttgtaa 1592
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 gtagtaactc acttttccat atattttgaa tgtatatttc tatttatgat accaatttat 1832
 aaaaaataat tacacagaaa aaatggaata ggaaaaatta tgcacttagc acattttaa 1892
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 ttatgcacta gttcagacaa ctttcctgt tacttgttct tgataagtga aaactgcagg 2312
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<400> 825

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ccgaggcctc ctgcagccat c  atg tcc gcc agc gcc gtc tac gtg ctg gac 171
                        Met Ser Ala Ser Ala Val Tyr Val Leu Asp
                        1                      5

ctg aag ggc aag gtg ctc atc tgc cgg aac tac cgt ggc gac gtg gac 219
Leu Lys Gly Lys Val Leu Ile Cys Arg Asn Tyr Arg Gly Asp Val Asp
 11                      16                      21                      26

atg tca gag gtg gag cac ttc atg ccc atc ctg atg gag aag gag gag 267
Met Ser Glu Val Glu His Phe Met Pro Ile Leu Met Glu Lys Glu Glu
 27                      32                      37                      42

gag ggg atg ctg tgc ccc atc ctg gcc cac ggg ggg gtc cgt ttc atg 315
Glu Gly Met Leu Ser Pro Ile Leu Ala His Gly Gly Val Arg Phe Met
 43                      48                      53                      58

tgg atc aaa cac aac aac ctg tat ctg gtt gcc aca tcc aag aag aac 363
Trp Ile Lys His Asn Asn Leu Tyr Leu Val Ala Thr Ser Lys Lys Asn
 59                      64                      69                      74

gcg tgc gtg tgc ctg gtc ttt tct ttc ctc tat aag gtg gtg cag gtg 411
Ala Cys Val Ser Leu Val Phe Ser Phe Leu Tyr Lys Val Val Gln Val
 75                      80                      85                      90

ttt tcc gag tac ttc aag gag ctg gag gag gag agc atc cgg gac aac 459
Phe Ser Glu Tyr Phe Lys Glu Leu Glu Glu Glu Ser Ile Arg Asp Asn
 91                      96                      101                      106

ttt gtt atc atc tac gag ctg ctg gac gag ctc atg gac ttc ggc tac 507
Phe Val Ile Ile Tyr Glu Leu Leu Asp Glu Leu Met Asp Phe Gly Tyr
107                      112                      117                      122

ccc cag acc acc gac agc aag atc ctg cag gag tac atc act cag gaa 555
Pro Gln Thr Thr Asp Ser Lys Ile Leu Gln Glu Tyr Ile Thr Gln Glu
123                      128                      133                      138

ggc cac aag ctg gaa aca ggg gcc ccg cgg cca cca gcc acc gtc acc 603
Gly His Lys Leu Glu Thr Gly Ala Pro Arg Pro Pro Ala Thr Val Thr
139                      144                      149                      154

aac gcg gtg tcc tgg cgg tcc gaa ggc atc aag tat cgg aag aat gag 651
Asn Ala Val Ser Trp Arg Ser Glu Gly Ile Lys Tyr Arg Lys Asn Glu
155                      160                      165                      170

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ggc aat gtc ctg cgc agc gag atc gtg ggc tcc atc aag atg cga gtc	747
Gly Asn Val Leu Arg Ser Glu Ile Val Gly Ser Ile Lys Met Arg Val	
187 192 197 202	
ttc ctc tcg ggc atg ccc gag ctg cgc ctg ggc ctc aac gac aag gtc	795
Phe Leu Ser Gly Met Pro Glu Leu Arg Leu Gly Leu Asn Asp Lys Val	
203 208 213 218	
ctc ttt gac aac acg ggc cgc ggc aaa agc aaa tcc gtg gag ctg gag	843
Leu Phe Asp Asn Thr Gly Arg Gly Lys Ser Lys Ser Val Glu Leu Glu	
219 224 229 234	
gat gtg aag ttc cac cag tgt gtg cgg cta tca cgc ttc gag aat gac	891
Asp Val Lys Phe His Gln Cys Val Arg Leu Ser Arg Phe Glu Asn Asp	
235 240 245 250	
cgc acc atc tcc ttc atc cca ccc gac ggc gag ttc gag ctc atg tcc	939
Arg Thr Ile Ser Phe Ile Pro Pro Asp Gly Glu Phe Glu Leu Met Ser	
251 256 261 266	
tac cgt ctc aac acc cac gtc aag cct ttg ata tgg atc gag tcg gtg	987
Tyr Arg Leu Asn Thr His Val Lys Pro Leu Ile Trp Ile Glu Ser Val	
267 272 277 282	
atc gag aag cac tcc cac agc cgc atc gag tac atg atc aag gcc aaa	1035
Ile Glu Lys His Ser His Ser Arg Ile Glu Tyr Met Ile Lys Ala Lys	
283 288 293 298	
agc cag ttc aag cgg cgg tca aca gcc aac aac gtg gag atc cac att	1083
Ser Gln Phe Lys Arg Arg Ser Thr Ala Asn Asn Val Glu Ile His Ile	
299 304 309 314	
ccc gtg ccc aat gat gcc gac tca ccc aag ttc aag acg acg gtg ggg	1131
Pro Val Pro Asn Asp Ala Asp Ser Pro Lys Phe Lys Thr Thr Val Gly	
315 320 325 330	
agc gtt aag tgg gtc ccc gag aac agc gag atc gtg tgg tcc atc aag	1179
Ser Val Lys Trp Val Pro Glu Asn Ser Glu Ile Val Trp Ser Ile Lys	
331 336 341 346	
tcc ttc ccg ggc ggc aag gag tac ctg atg cgg gcc cac ttc ggc ctg	1227
Ser Phe Pro Gly Gly Lys Glu Tyr Leu Met Arg Ala His Phe Gly Leu	
347 352 357 362	
cct agt gtg gag gcc gaa gac aag gag ggc aag ccc ccg atc agt gtc	1275
Pro Ser Val Glu Ala Glu Asp Lys Glu Gly Lys Pro Pro Ile Ser Val	
363 368 373 378	
aag ttc gag atc cct tac ttc act acc tcc ggc atc cag gtg cgc tac	1323
Lys Phe Glu Ile Pro Tyr Phe Thr Thr Ser Gly Ile Gln Val Arg Tyr	
379 384 389 394	

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ctg aag atc att gag aag agt ggg tac cag gcc ctg ccc tgg gtg cgt      1371
Leu Lys Ile Ile Glu Lys Ser Gly Tyr Gln Ala Leu Pro Trp Val Arg
395                400                405                410

tat atc acg cag aat gga gat tac cag ctc egg acc cag tga ggggctg      1420
Tyr Ile Thr Gln Asn Gly Asp Tyr Gln Leu Arg Thr Gln *
411                416                421

tcgcagccaa cccccggcc tcggggctcc tgggtggcagc accaggggac acacctgcca      1480
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ccgaggcctc ctgcagccat c	atg tcc gcc agc gcc gtc tac gtg ctg gac	171
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ctg aag ggc aag gtg ctc atc tgc cgg aac tac cgt ggc gac gtg gac	219	
Leu Lys Gly Lys Val Leu Ile Cys Arg Asn Tyr Arg Gly Asp Val Asp		
11 16 21 26		
atg tca gag gtg gag cac ttc atg ccc atc ctg atg gag aag gag gag	267	
Met Ser Glu Val Glu His Phe Met Pro Ile Leu Met Glu Lys Glu Glu		
27 32 37 42		
gag ggg atg ctg tcg ccc atc ctg gcc cac ggg ggg gtc cgt ttc atg	315	
Glu Gly Met Leu Ser Pro Ile Leu Ala His Gly Gly Val Arg Phe Met		
43 48 53 58		
tgg atc aaa cac aac aac ctg tat ctg gtt gcc aca tcc aag aag aac	363	
Trp Ile Lys His Asn Asn Leu Tyr Leu Val Ala Thr Ser Lys Lys Asn		
59 64 69 74		
gcg tgc gtg tcg ctg gtc ttt tct ttc ctc tat aag gtg gtg cag gtg	411	
Ala Cys Val Ser Leu Val Phe Ser Phe Leu Tyr Lys Val Val Gln Val		
75 80 85 90		
ttt tcc gag tac ttc aag gag ctg gag gag gag agc atc cgg gac aac	459	
Phe Ser Glu Tyr Phe Lys Glu Leu Glu Glu Glu Ser Ile Arg Asp Asn		
91 96 101 106		
ttt gtt atc atc tac gag ctg ctg gac gag ctc atg gac ttc ggc tac	507	
Phe Val Ile Ile Tyr Glu Leu Leu Asp Glu Leu Met Asp Phe Gly Tyr		
107 112 117 122		
ccc cag acc acc gac agc aag atc ctg cag gag tac atc act cag gaa	555	
Pro Gln Thr Thr Asp Ser Lys Ile Leu Gln Glu Tyr Ile Thr Gln Glu		
123 128 133 138		
ggc cac aag ctg gaa aca ggg gcc ccg cgg cca cca gcc acc gtc acc	603	
Gly His Lys Leu Glu Thr Gly Ala Pro Arg Pro Pro Ala Thr Val Thr		
139 144 149 154		
aac gcg gtg tcc tgg cgg tcc gaa ggc atc aag tat cgg aag aat gag	651	
Asn Ala Val Ser Trp Arg Ser Glu Gly Ile Lys Tyr Arg Lys Asn Glu		
155 160 165 170		
gtg ttc ttg gac gtc atc gag tct gtc aac ctc ttg gtc agc gcc aac	699	
Val Phe Leu Asp Val Ile Glu Ser Val Asn Leu Leu Val Ser Ala Asn		
171 176 181 186		
ggc aat gtc ctg cgc agc gag atc gtg ggc tcc atc aag atg cga gtc	747	
Gly Asn Val Leu Arg Ser Glu Ile Val Gly Ser Ile Lys Met Arg Val		
187 192 197 202		
ttc ctc tcg ggc atg cgc gag ctg cgc ctg ggc ctc aac gac aag gtc	795	
Phe Leu Ser Gly Met Pro Glu Leu Arg Leu Gly Leu Asn Asp Lys Val		
203 208 213 218		
ctc ttt gac aac acg ggc cgc ggc aaa agc aaa tcc gtg gag ctg gag	843	

Leu Phe Asp Asn Thr Gly Arg Gly Lys Ser Lys Ser Val Glu Leu Glu	
219 224 229 234	
gat gtg aag ttc cac cag tgt gtg cgg cta tca cgc ttc gag aat gac	891
Asp Val Lys Phe His Gln Cys Val Arg Leu Ser Arg Phe Glu Asn Asp	
235 240 245 250	
cgc acc atc tcc ttc atc cca ccc gac ggc gag ttc gag ctc atg tcc	939
Arg Thr Ile Ser Phe Ile Pro Pro Asp Gly Glu Phe Glu Leu Met Ser	
251 256 261 266	
tac cgt ctc aac acc cac gtc aag cct ttg ata tgg atc gag tcg gtg	987
Tyr Arg Leu Asn Thr His Val Lys Pro Leu Ile Trp Ile Glu Ser Val	
267 272 277 282	
atc gag aag cac tcc cac agc cgc atc gag tac atg atc aag ggc ggc	1035
Ile Glu Lys His Ser His Ser Arg Ile Glu Tyr Met Ile Lys Gly Gly	
283 288 293 298	
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Lys Glu Tyr Leu Met Arg Ala His Phe Gly Leu Pro Ser Val Glu Ala	
299 304 309 314	
gaa gac aag gag ggc aag ccc ccg atc agt gtc aag ttc gag atc cct	1131
Glu Asp Lys Glu Gly Lys Pro Pro Ile Ser Val Lys Phe Glu Ile Pro	
315 320 325 330	
tac ttc act acc tcc ggc atc cag gtg cgc tac ctg aag atc att gag	1179
Tyr Phe Thr Thr Ser Gly Ile Gln Val Arg Tyr Leu Lys Ile Ile Glu	
331 336 341 346	
aag agt ggg tac cag gcc ctg ccc tgg gtg cgt tat atc acg cag aat	1227
Lys Ser Gly Tyr Gln Ala Leu Pro Trp Val Arg Tyr Ile Thr Gln Asn	
347 352 357 362	
gga gat tac cag ctc cgg acc cag tga ggggc tgctgcagcc aacaccccg	1279
Gly Asp Tyr Gln Leu Arg Thr Gln *	
363 368	
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<210> 827
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<212> DNA
<213> Homo sapiens

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<220>
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<222> (512)..(754)

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taaagcaaag ccaaactgga gagaccagag ccagagcctt tattactaaa agataattgc 360
ctttgatgag ttaaggacag attttaagag ccccatagac cagtgcattc ctgttcatgc 420
gaggggaacgg ttgaggaaca tcgagcgcat ctgcttcctt ctgcgaaagc tgggtgctgcc 480
agaatactcc atccatagcc tcttctgcat t   atg ttc ctg tgt gcg caa gag 532
                               Met Phe Leu Cys Ala Gln Glu
                               1                               5

tgg ctc acg ctg ggg ctg aat gtc cct cta ctt ttc tat cac ttc tgg 580
Trp Leu Thr Leu Gly Leu Asn Val Pro Leu Leu Phe Tyr His Phe Trp
  8                               13                               18                               23

agg tat ttc cac tgt cca gca gat agc tca gaa cta gcc tac gac cca 628
Arg Tyr Phe His Cys Pro Ala Asp Ser Ser Glu Leu Ala Tyr Asp Pro
 24                               29                               34                               39

ccg gtg gtc atg aat gcc gac act ttg agt tac tgt cag aag gag gcc 676
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gaggaggggc aggaccagat cttttgagag ctgaggggttg agggcattga gccaacacac      180
agatttgctc cctctgtccc cgaagacacc tgcaccctcc atgcggagcc aag   atg      236
                                   Met
                                   1

ggg aat gga act gag gaa gat tat aac ttt gtc ttc aag gtg gtg ctg      284
Gly Asn Gly Thr Glu Glu Asp Tyr Asn Phe Val Phe Lys Val Val Leu
  2              7              12              17

atc ggc gaa tca ggt gtg ggg aag acc aat cta ctc tcc cga ttc acg      332
Ile Gly Glu Ser Gly Val Gly Lys Thr Asn Leu Leu Ser Arg Phe Thr
  18              23              28              33

cgc aat gag ttc agc cac gac agc cgc acc acc atc ggg gtt gag ttc      380
Arg Asn Glu Phe Ser His Asp Ser Arg Thr Thr Ile Gly Val Glu Phe
  34              39              44              49

tcc acc cgc act gtg atg ttg ggc acc gct gct gtc aag gct cag atc      428
Ser Thr Arg Thr Val Met Leu Gly Thr Ala Ala Val Lys Ala Gln Ile
  50              55              60              65

tgg gac aca gct ggc ctg gag cgg tac cga gcc atc acc tcg gcg tac      476
Trp Asp Thr Ala Gly Leu Glu Arg Tyr Arg Ala Ile Thr Ser Ala Tyr
  66              71              76              81

tat cgt ggt gca gtg ggg gcc ctc ctg gtg ttt gac cta acc aag cac      524
Tyr Arg Gly Ala Val Gly Ala Leu Leu Val Phe Asp Leu Thr Lys His
  82              87              92              97

cag acc tat gct gtg gtg gag cga tgg ctg aag gag ctc tat gac cat      572
Gln Thr Tyr Ala Val Val Glu Arg Trp Leu Lys Glu Leu Tyr Asp His
  98              103              108              113

gct gaa gcc acg atc gtc gtc atg ctc gtg ggt aac aaa agt gac ctc      620
Ala Glu Ala Thr Ile Val Val Met Leu Val Gly Asn Lys Ser Asp Leu
  114              119              124              129

agc cag gcc cgg gaa gtg ccc act gag gag gcc cga atg ttc gct gaa      668
Ser Gln Ala Arg Glu Val Pro Thr Glu Glu Ala Arg Met Phe Ala Glu
  130              135              140              145

aac aat gga ctg ctc ttc ctg gag acc tca gcc ctg gac tct acc aat      716
Asn Asn Gly Leu Leu Phe Leu Glu Thr Ser Ala Leu Asp Ser Thr Asn
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gtt gag cta gcc ttt gag act gtc ctg aaa gaa atc ttt gcg aag gtg      764
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Asn Lys Pro Tyr Lys Lys Val Leu Arg Thr Arg Tyr Ile Gln Thr Glu	
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Leu Gly Ser Arg Glu Arg Leu Leu Val Ala Val Leu Thr Ser Arg Ala	
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Thr Leu Ser Thr Leu Ala Val Ala Val Asn Arg Thr Val Ala His His	
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Phe Pro Arg Leu Leu Tyr Phe Thr Gly Gln Arg Gly Ala Arg Ala Pro	
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Ala Gly Met Gln Val Val Ser His Gly Asp Glu Arg Pro Ala Trp Leu	
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Met Ser Glu Thr Leu Arg His Leu His Thr His Phe Gly Ala Asp Tyr	
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Asp Trp Phe Phe Ile Met Gln Asp Asp Thr Tyr Val Gln Ala Pro Arg	
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Leu Ala Ala Leu Ala Gly His Leu Ser Ile Asn Gln Asp Leu Tyr Leu	
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Gly Arg Ala Glu Glu Phe Ile Gly Ala Gly Glu Gln Ala Arg Tyr Cys	
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His Gly Gly Phe Gly Tyr Leu Leu Ser Arg Ser Leu Leu Leu Arg Leu	
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Arg Pro His Leu Asp Gly Cys Arg Gly Asp Ile Leu Ser Ala Arg Pro	
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Asp Glu Trp Leu Gly Arg Cys Leu Ile Asp Ser Leu Gly Val Gly Cys	
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Val Ser Gln His Gln Gly Gln Gln Tyr Arg Ser Phe Glu Leu Ala Lys	
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Asn Arg Asp Pro Glu Lys Glu Gly Ser Ser Ala Phe Leu Ser Ala Phe	
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Phe Ser Cys Ala Asp Gly Ala Pro Lys Cys Pro Leu Gln Gly Ala Ser	
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Gly Tyr Arg Arg Phe Asp Pro Ala Arg Gly Met Glu Tyr Thr Leu Asp	
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Gln Ala Asn Ser Thr *				
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Phe Tyr Gly Ser Ile Ser Arg Ala Glu Ala Glu Glu His Leu Lys Leu	
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